WAVELAB ELEMENTS 11

Personal Audio Editing System

steinberg

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This document provides improved access for people who are blind or have low vision. Please note that due to the complexity and number of images in this document, it is not possible to include text descriptions of images.

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Table of Contents

New Features

The following list informs you about the most important improvements in WaveLab Elements and provides links to the corresponding descriptions.

New Features in Version 11.2.0

Smooth Pencil Line

- A newly added error correction method that enables you to remove tiny clicks from your audio by drawing a line to replace the corrupted sample. See Process Tab.

New Features in Version 11.0.0

Highlights

Multichannel Interleaved Audio Files

- WaveLab Elements now supports multichannel interleaved audio files up to a 5.1 channel layout. See Multichannel Audio Files.

Multichannel Support in Audio Montages

- WaveLab Elements now has multichannel support in audio montages. See Multichannel Operations in the Audio Montage.

Ducking

- Ducking allows you to control the level of an audio track with another audio track. This is commonly used to control the music level of one track with the voice level on another track. See Track Ducking.

Clean Up and Enhance Your Tracks

- The **Inspector** window now allows you to clean up and enhance your tracks. You can use the **DeEsser**, **DeNoiser**, and **DeHummer** to clean your audio. The **Voice Exciter**, **Reverb**, **EQ**, and **Maximizer** allow you to enhance your audio. See Inspector Window.

Recording Single or Multiple Tracks in the Audio Montage

- You can now record single or multiple tracks directly in the audio montage. WaveLab Elements automatically detects the available input buses of your ASIO device and creates the stereo and mono input buses. See Recording in the Audio Montage Window.

Input Monitoring

- You can now monitor the input signal in the audio montage. This allows you to listen to the effects that your WaveLab Elements setup has on your input signal. See Input Monitoring.

Direct Monitoring

- Direct monitoring allows you to monitor the input signal with lower latency. If **Direct Monitoring** is activated, the input signal is monitored directly without going through the audio montage and its effects. See Direct Monitoring.

Replacing Audio in Video

- You can now replace the audio track of a video with another audio file. See Replacing Audio in Video.

Directly Publish Podcasts to Podcast Host Services

- WaveLab Elements now allows you to directly upload your Podcast to Podcast Host Services. See Podcast.

More New Features

DeEsser

- **DeEsser** is a special type of compressor that reduces excessive sibilance, primarily for vocal recordings. The plug-in is described in the separate document **Plug-in Reference**.

EnvelopeShaper

- **EnvelopeShaper** can be used to attenuate or boost the gain of the attack and release phase of audio material. The plug-in is described in the separate document **Plug-in Reference**.

Expander

- **Expander** reduces the output level in relation to the input level for signals below the set threshold. This is useful if you want to enhance the dynamic range or reduce the noise in quiet passages. The plug-in is described in the separate document **Plug-in Reference**.

Maximizer

- **Maximizer** raises the loudness of audio material without the risk of clipping. The plug-in is described in the separate document **Plug-in Reference**.

Mix6to2

- **Mix6to2** lets you quickly mix down your surround mix format to stereo. The plug-in is described in the separate document **Plug-in Reference**.

MonoToStereo

- **MonoToStereo** turns a mono signal into a pseudo-stereo signal. The plug-in can be used on a mono file or a stereo file with equal channels. The plug-in is described in the separate document **Plug-in Reference**.

PingPongDelay

- **PingPongDelay** is a stereo delay effect that alternates each delay repeat between the left and right channels. The plug-in is described in the separate document **Plug-in Reference**.

Timecode Window

- The **Timecode** window can display the recorded time, the time offset in relation to various positions, and dynamic colors according to the context. See Timecode Window.

Loudness Normalizer

- You can use the **Loudness Normalizer** to achieve a specific loudness. See Loudness Normalizer.

Multi-Core Processing for Audio Montages

- WaveLab Elements now supports multi-core processing for audio montages. This allows for faster processing of audio montages with multiple tracks, clips, and effects. The audio signal in WaveLab Elements is processed in the following way: First clips, then tracks, and then clip groups are each processed in parallel. After that, the output is processed. If you are using the **Master Section**, this is processed last. See Audio Montage.

Stopping Recording When Record Position Reaches Next Marker

- The **Stop When Record Position Reaches Next Marker** option now allows you to automatically stop recording when the record position reaches the next visible marker of the montage. Hidden markers are not taken into account. See Track Control Area for Stereo and Mono Tracks.

Number of Audio Montage Tracks Increased to 15

- You can now add 15 tracks to audio montages. See Tracks.

Track Routing

- You can now route audio montage channels to the montage output channels. See Track Routing Dialog.

Selection Ranges on Multiple Tracks

- You can now make selection ranges on multiple tracks for copy/paste operations in the **Audio Montage** window. See Selection Ranges in Audio Montages.

Lin One Dither

- **Lin One Dither** is a dithering plug-in that offers additional noise shaping to increase the apparent signal-to-noise ratio by altering the spectrum of the low-level audio signal. **Lin One Dither** has been added to WaveLab Elements. The plug-in is described in the separate document **Plug-in Reference**.

Phasescope

- The **Phasescope** indicates the phase and amplitude relationship between two stereo channels. See Phasescope.

Spectrometer

- The **Spectrometer** uses FFT (Fast Fourier Transform) techniques to display a frequency graph, providing a precise and detailed real-time frequency analysis. See Spectrometer.

Bit Meter

- The **Bit Meter** shows how many bits are used. See Bit Meter.

Wavescope

- The **Wavescope** meter displays a real-time waveform drawing of the audio signal being monitored. See Wavescope.

Podcast Editor is now RSS Feed

- The **Podcast Editor** has been enhanced and renamed to **RSS Feed**. See RSS Feed Editor.

Last but Not Least

Custom Names for Audio Ports

- You can now specify custom names for your audio ports in the **Audio Connections** tab. See Specifying Custom Names for Audio Ports.

Sending Mono File Audio Streams to a Dedicated Speaker

- You can specify a dedicated speaker to send the audio stream of mono files to. See Sending Mono File Audio Streams to a Dedicated Speaker.

Improved Startup Dialog

- The **Startup** dialog has been improved. See Startup Dialog.

Shift Selection to the Left or Right

- You can now shift your selection by its length to the left or right. See Audio Range Selection in an Audio File.

Toggle Channel Selection Mode

- The channel selection mode allows you to switch between selecting all channels and selecting individual channels when you click and drag in the wave window. See Selecting Channels in Audio Files.

Default Effect Presets

- You can save your effect parameter settings for VST 3 and VST 2 plug-ins as the default effect preset. See Saving Default Presets for VST Plug-ins.

Including Notes in Audio Montage Templates

- You can now include notes that you have written in the **Notes** window when you create an audio montage template based on an audio montage. See Audio Montage Template Dialog.

Playing Back Multichannel Files on Stereo Speakers

- If your audio device setup does consist of less speakers than audio channels in your multichannel audio file, you can assign different speakers to the same audio port to play back the multichannel file on stereo speakers, for example. See Playing Back Multichannel Files.

Montage Track Peak Meter Shows Left and Right Stereo Channel

- The track peak meter in the audio montage now shows the volume level for the left channel and the right channel of stereo tracks independently. See Track Peak Meter.

More Time Selection Options in the Audio Montage

- There are now more options for creating or extending time selections in audio montages in the **Extend** pop-up menu in the **Time Selection** section on the **Edit** tab. See Edit Tab (Audio Montage).

Inserting Stereo Audio Files into Mono Tracks or Vice Versa

- When you insert a stereo audio file into a mono track, you can decide whether to automatically create a stereo track or split the stereo file on two mono tracks. See Insert Stereo Audio Files into Mono Tracks or Vice Versa.

Delete Selections of Clips

- You can now delete a selection range within a clip. See Deleting Parts of Clips Inside Selection Ranges.

Improved Methods for Adding Envelope Curve Points

- You now have additional possibilities for adding multiple envelope curve points. See Adding Envelope Curve Points.

Showing/Hiding Panes in the Inspector Window

- You can show or hide panes in the **Inspector** window to focus on the panes that you need. See Showing/Hiding Panes in the Inspector Window.

Canceling Background Tasks via Key Command

- You can now press **Alt/Opt** - **.** on your keyboard to cancel rendering processes that run in the background. See Canceling Background Tasks.

Restrict High DPI Scaling to Multiples of 100

- The **Restrict Scaling to Multiples of 100** option allows you to decide whether the scaling factor must be multiples of 100 or if intermediate ratios are allowed. See Display Tab (Global Preferences).

WaveLab Elements Introduction

Platform-Independent Documentation

The documentation applies to the operating systems Windows and macOS.

Features and settings that are specific to one of these platforms are clearly indicated. In all other cases, the descriptions and procedures in the documentation are valid for Windows and macOS.

Some points to consider:

- The screenshots are taken from Windows.
- Some functions that are available on the **File** menu on Windows can be found in the program name menu on macOS.

Help System

There are several ways of accessing the help system. The documentation is available online and you can download most of it in PDF format from steinberg.help.

Documentation

The documentation consists of several documents.

To visit steinberg.help, do one of the following:

- Enter **www.steinberg.help** in the address bar of your web browser.
- In the program, select **Help** > **steinberg.help**.
- Windows: To open the help for an active dialog on steinberg.help, click the question mark icon on the title bar to show the **Help** button and click the **Help** button, or press `F1`.
- macOS: To open the help for an active dialog on steinberg.help, click the question mark icon in the dialog to show the **Help** button and click the **Help** button, or press `Cmd`-`?`.

Operation Manual
The main WaveLab Elements reference documentation, with detailed descriptions of operations, parameters, functions, and techniques.

Plug-in Reference
Describes the features and parameters of the included plug-ins.

DDP Player
Describes the features and functions of the included **DDP Player**.

Tooltips

- To show tooltips, move the mouse over an interface icon.
- To use the menu help, move the mouse over a menu item.

- To see information on what kind of editing can be performed when using the mouse and modifier keys in the **Audio Montage** window, move the mouse over the montage window. The help text is displayed on the info line at the bottom of the window.

What's This

The **What's This** help provides extended tooltips about interface icons and functions. Some **What's This** tooltips include a link to a dedicated help topic on steinberg.help.

To open the **What's This** help, do one of the following:

- In any window, press **Shift** - **F1** and move the mouse over an interface item, or select **Help** > **What's This?**.
- In a dialog, select the question mark icon on any title bar (Windows) or in the dialog (macOS), and move the mouse over an interface item or a menu option.

RELATED LINKS

Typographical Conventions

In our documentation, we use structural and markup elements to present information according to its purpose.

Structural Elements

Prerequisite

Describes any actions or conditions you must have fulfilled before starting a procedure.

Procedure

Lists the steps that you must take to achieve a specific result.

Important

Informs you about serious issues; for example, issues that affect the system, the connected hardware, or that risk data loss.

Note

Informs you about issues or other relevant information.

Tip

Adds further information or useful suggestions.

Example

Provides you with an example.

Result

Describes the result of the procedure.

After Completing This Task

Informs you about actions or tasks that you can perform after completing the procedure.

Related Links

Lists related topics that you can find in this documentation.

Markup

Bold text indicates the name of a menu, option, function, dialog, window, and so on.

EXAMPLE

In the **Audio Montage**, click **Edit**.

If bold text is separated by a greater-than symbol, this indicates a sequence of different menus to open.

EXAMPLE

Select **File** > **Preferences** > **Audio Connections**.

File names and folder paths are shown in a different font.

EXAMPLE

example_file.txt

Structural Elements

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Markup

Bold text indicates the name of a menu, option, function, dialog, window, etc.

EXAMPLE

To open the **Metadata** dialog, open the **Metadata** window and click **Edit**.

If bold text is separated by a greater-than symbol, this indicates a sequence of different menus to open.

EXAMPLE

Select **File** > **Open**.

Key Commands

Many of the default key commands, also known as keyboard shortcuts, use modifier keys, some of which are specific to each operating system.

Whenever key commands with modifier keys are described in this manual, the Windows modifier key is indicated first, followed by the macOS modifier key and the key.

EXAMPLE

Ctrl/Cmd-**Z** means: press **Ctrl** on Windows or **Cmd** on macOS, then press **Z**.

Setting Up Your System

Before you start working, you need to make some settings.

IMPORTANT

Make sure that all equipment is turned off before making any connections.

RELATED LINKS

Connecting the Equipment

Your system setup depends on many different factors, for example, the kind of project that you want to create, the external equipment that you want to use, or the computer hardware available to you.

Audio Cards and Background Playback

When you activate playback or recording in WaveLab Elements, other applications cannot access the audio card. Likewise, if another application uses the audio card, WaveLab Elements is unable to play back.

You can run WaveLab Elements together with other applications and always give the active application access to the audio card.

PROCEDURE

1. Select **File** > **Preferences** > **Audio Connections**.

2. Select the **Options** tab.

3. Activate **Release Driver**.

4. Do one of the following:

   - If you want to release the driver when WaveLab Elements is in the background, activate **When WaveLab Elements is in Background**.

   - If you want to release the driver only when Cubase/Nuendo is in the foreground, activate **When Cubase/Nuendo is in Foreground**.

RELATED LINKS

Latency

Latency is the delay between when audio is sent from the program and when you actually hear it. While a very low latency can be crucial in a real-time DAW application such as Steinberg Nuendo or Cubase, this is not strictly the case with WaveLab Elements.

When working with WaveLab Elements, the important issues are optimum and stable playback and editing precision.

The latency in an audio system depends on the audio hardware, its drivers, and settings. In case of dropouts, crackles, or glitches during playback, raise the **ASIO-Guard** setting on the **Options** tab in the **Audio Connections**, or increase the buffer size in the ASIO control panel, specific to the audio card.

RELATED LINKS
ASIO-Guard on page 14
Audio Connections Tab on page 16

ASIO-Guard

The ASIO-Guard allows you to pre-process all channels as well as VST plug-ins. This causes fewer dropouts and allows you to process more tracks or plug-ins.

High ASIO-Guard levels cause an increased ASIO-Guard latency. When you adjust a volume fader, for example, you hear parameter changes with a slight delay.

NOTE

Resampler plug-ins and certain other plug-ins with high latencies accumulate samples before processing them. This requires a higher ASIO-Guard setting.

RELATED LINKS
Setting up ASIO-Guard on page 14

Setting up ASIO-Guard

You can specify the length of the ASIO-Guard buffer.

PROCEDURE

1. Select **File** > **Preferences** > **Audio Connections**.

2. Click the **Options** tab.

3. In the **ASIO-Guard** menu, specify the length of the ASIO-Guard buffer.

    The higher the level, the higher the processing stability and audio processing performance. However, higher levels also lead to an increased ASIO-Guard latency and memory usage.

RELATED LINKS
Audio Connections Tab on page 16

Defining Audio Connections

To be able to play back and record audio in WaveLab Elements, you must specify how the internal input and output channels in WaveLab Elements are connected to your sound card and which device you intend to use for audio playback and recording.

You can define the buffer settings for your device. You should select at least two channels for stereo playback and recording.

If you have no third-party audio card, you can select the **Generic Low Latency** driver or **Built-in Audio** (macOS only) options. You can also use the **Generic Low Latency** driver with most third-party audio cards. This allows you to record and play at different sample rates.

RELATED LINKS
Selecting an Audio Driver on page 15
Audio Connections Tab on page 16
Recording on page 254

Selecting an Audio Driver

By selecting an audio driver, you allow WaveLab Elements to communicate with the audio hardware.

NOTE

On Windows operating systems, we recommend that you access your hardware via an ASIO driver developed specifically for the hardware. If no ASIO driver is installed, contact the manufacturer of your audio hardware for information on available ASIO drivers. If no specific ASIO driver is available, you can use the Generic Low Latency ASIO driver.

PROCEDURE

1. Select **File** > **Preferences** > **Audio Connections**.

2. Open the **Audio Device** pop-up menu and select your driver.

3. Optional: Click **Control Panel** and make your settings.

RELATED LINKS
Audio Connections Tab on page 16
ASIO Driver on page 15
Selecting the Generic Low Latency Driver ASIO Driver (Windows only) on page 16

ASIO Driver

Audio Stream Input/Output (ASIO) is a computer device driver protocol for digital audio specified by Steinberg. It provides a low-latency and high fidelity interface between a software application and the sound card of a computer.

RELATED LINKS
Selecting an Audio Driver on page 15
Selecting the Generic Low Latency Driver ASIO Driver (Windows only) on page 16

Selecting the Generic Low Latency Driver ASIO Driver (Windows only)

If no specific ASIO driver is available, you can use the Generic Low Latency ASIO driver.

NOTE

The documentation for the Generic Low Latency ASIO driver is located here: `C:\Program Files\Steinberg\Asio\Help`

PROCEDURE

1. Select **File** > **Options** > **Audio Connections**.

2. Open the **Audio Device** pop-up menu and select **Generic Low Latency ASIO Driver**.

3. Optional: Click **Control Panel** and make your settings.

RELATED LINKS

Audio Connections Tab

This tab allows you to specify how the internal input and output buses in WaveLab Elements are connected to your sound card and which device you want to use for audio playback and recording.

● To open the **Audio Connections** tab, select **File** > **Preferences** > **Audio Connections**.

Global Settings

Audio Device

Allows you to select the audio device that you want to use for playback and recording audio. If you do not have a third-party audio card, you can select the **Generic Low Latency** driver or **Built-in Audio** (macOS only) options.

Port Names

Opens the **Audio Port Names** dialog where you can specify a custom names for each input and output audio port.

Control Panel

When you select an ASIO driver, the **Control Panel** button is activated. Click the button to open the settings application of your sound card, which is usually installed with the sound card. Depending on your sound card and driver, this provides settings for buffer size, digital formats, additional I/O connections, etc.

Refresh

This button causes audio devices to be evaluated again to reflect device changes.

Playback Tab
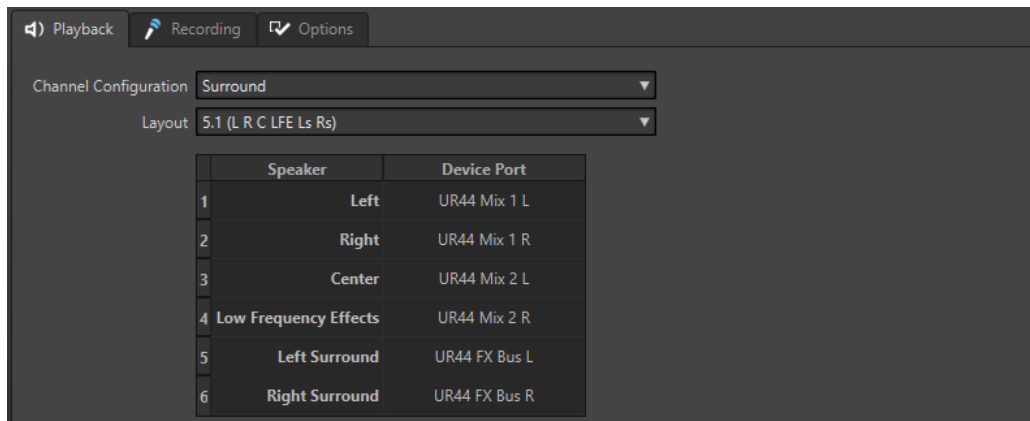
This tab allows you to select buses that are used for playback.

Channel Configuration

Allows you to route playback buses to device ports. You can switch between **Universal**, **Stereo**, **Surround**, and **Ambisonics**. In the table below the **Channel Configuration** menu, you can specify the **Device Port** for each channel of a playback bus.

Recording Tab

The first time an audio device is detected, WaveLab Elements automatically assigns input buses. You can use this configuration or edit the input buses.
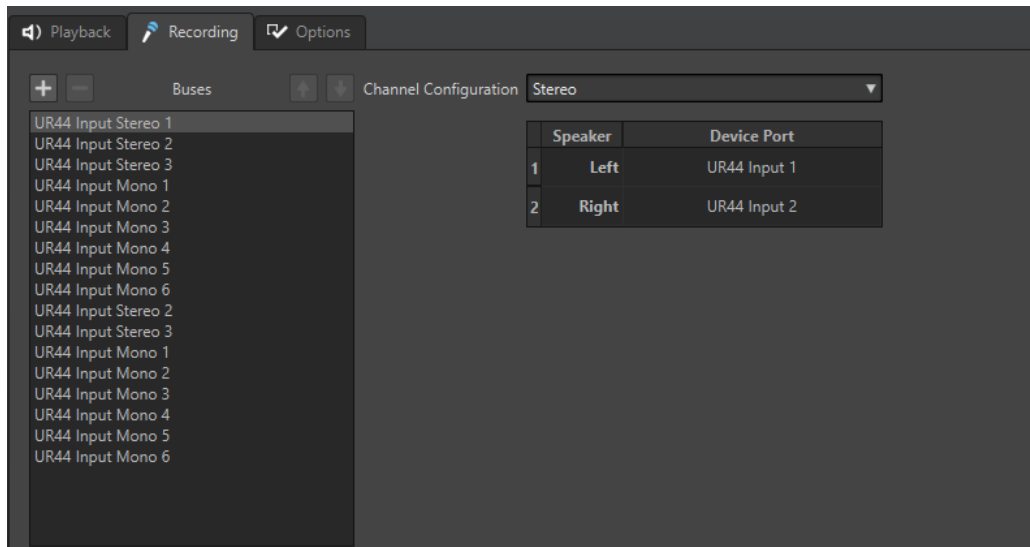
This tab allows you to add buses that are used for recording and input monitoring. The inputs that you define here are then available in the **Recording** dialog.

Add Bus

Adds a new recording bus to the bus list.

Remove Selected Bus

Removes the selected bus from the bus list.

Move Bus Up/Move Bus Down

Moves the selected bus up or down in the bus list. This also modifies the bus order in the WaveLab Elements menus.

Channel Configuration

Allows you to route recording buses to device ports. You can switch between **Mono**, **Stereo**, **Surround**, or **Ambisonics**. In the table below the **Channel Configuration** menu, you can specify the **Device Port** for each channel of a recording bus.

Buses List

Displays all buses. You can rename and move buses in the list. To rename a bus, double-click it and enter a new name.

Options Tab

This tab allows you to specify the number of buffers and the control driver functionality.

ASIO-Guard

Increasing this value improves the elasticity of audio streaming to avoid dropouts. The higher the level, the higher the processing stability and audio processing performance. However, higher levels also lead to an increased ASIO-Guard latency and memory usage.

Perform Short Fade In When Starting Playback

If this option is activated, a short fade in is performed when you start playback. This avoids clicks caused by waveforms that do not start on a zero-crossing point.

The fade is linear and either 10 milliseconds long or corresponds to the audio device block size if the block size is below 10 milliseconds.

Perform Short Fade Out When Stopping Playback

If this option is activated, a short fade out is performed when you stop playback. This avoids clicks caused by waveforms that do not end on a zero-crossing point. This also discards any audio signal that is caused by latency and any tail that is caused by reverb plug-ins.

The fade is linear and either 10 milliseconds long or corresponds to the audio device block size if the block size is below 10 milliseconds.

Release Driver

Allows you to run WaveLab Elements together with other applications and always give the active application access to the audio card.

- If **When WaveLab Elements is in Background** is activated, the driver is released when WaveLab Elements is in the background.

- If **When Cubase/Nuendo is in Foreground** is activated, the driver is released when Cubase/Nuendo is in the foreground.

Preferred Sample Rate

Allows you to specify the **Preferred Sample Rate** for playback.

Sample Rate Change Timeout

After WaveLab Elements requests the audio device to operate at a new sample rate, the driver sends WaveLab Elements a feedback when the task has been completed.

Most drivers do not require you to specify a sample rate change timeout. However, some drivers send delayed feedback or no feedback at all. For these cases, you can specify a timeout.

After the time you specify here, WaveLab Elements assumes the sample rate was accepted and attempts to start playback or recording. However, if WaveLab Elements receives feedback from the driver, the timeout expires.

If you experience sample rate change issues, increase the timeout to 3 or more seconds. The ideal time is the shortest time that works.

The bottom right of the **Master Section** displays a progress bar while waiting for the driver feedback.

Specifying Custom Names for Audio Ports

You can specify custom names for each input and output audio port of your connected audio gear. When you save an audio connections preset, the custom audio port names are part of the preset. You can save multiple audio connections preset with different names for the same audio device.

PROCEDURE

1. Select **File** > **Preferences** > **Audio Connections**.

2. Click **Port Names**.

3. In the top of the **Audio Port Names** dialog, select **Output Audio Ports** or **Input Audio Ports** from the pop-up menu.

4. In the audio port list, double-click the port name that you want to edit and enter a new name.
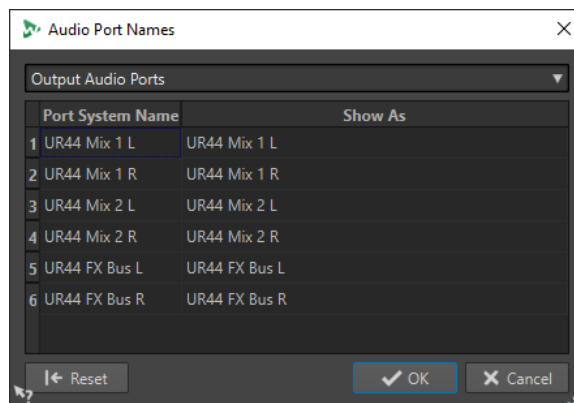
5. Optional: Repeat this for all the port names that you want to change.

6. Click **OK**.

Sending Mono File Audio Streams to a Dedicated Speaker

You can specify a dedicated speaker to send the audio stream of mono files to.

PROCEDURE

1. In the **Audio Connections** tab, click **Playback**.

2. In the **Channel Configuration** menu, select **Universal**.

3. Specify a **Device Port** for the **Mono File**.
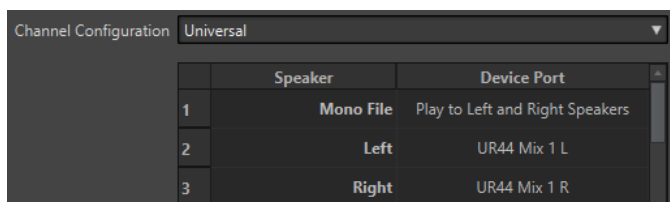
RELATED LINKS
Audio Connections Tab on page 16

CD/DVD Recorders

For general instructions on installing internal or connecting external recorders via USB or Firewire, refer to the instruction manual for your computer or your recorder.

Make sure to have the latest firmware version installed on your recorder unit. For CD recorders, the existing firmware must support disc-at-once mode. In addition, running a unit with older firmware can prevent you from writing sub-index markers into the tracks, for example.

Remote Devices

You can use Steinberg remote devices to remote-control WaveLab Elements.

Several commands can be controlled with knobs and sliders of your remote control device.

NOTE

Only remote devices from Steinberg are supported.

Remote Devices Tab

This tab allows you to select a Steinberg device to remote-control WaveLab Elements, and see the control map of MIDI control devices.

● To open the **Remote Devices** tab, select **File** > **Preferences** > **Remote Devices**.
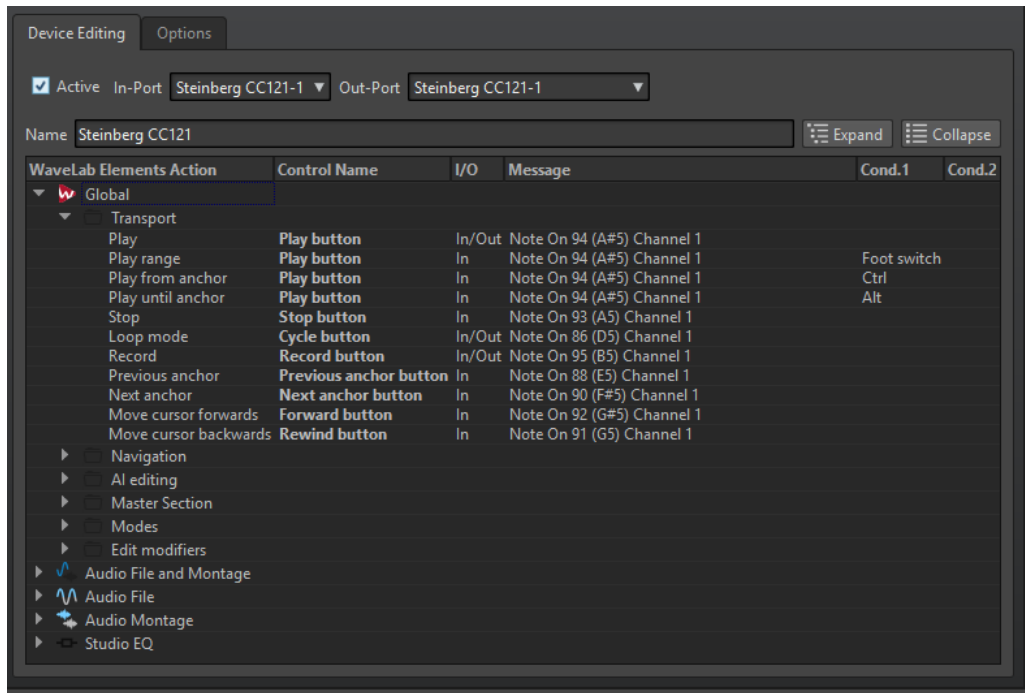
Device Editing Tab

This tab lets you select a MIDI control device and see the control map.

Active

Activates the selected device and scans the MIDI ports.

In-Port/Out-Port

Select the MIDI input/output ports of the device that you want to use.

Name

Lets you enter a map name.

Expand/Collapse

Expands/collapses the folder tree of the control map.

WaveLab Elements Action List

This folder tree lists the parameters that you can remote-control. The top folder represents contexts. The related parameters can only be controlled if the context is active. For example, if an audio file is active.

A remote control can be used in several contexts if these are exclusive. For example, parameters that can be used for an active audio file or an active audio montage.

The **Global** folder contains the parameters that can always be controlled.

Options Tab

Emulate Mouse Wheel

If this option is activated, the AI knob of Steinberg controllers acts as a mouse wheel in the WaveLab Elements user interface, except for plug-ins.

Edit Focused Numeric Field

If this option is activated, the AI knob Steinberg controllers can be used to edit the focused numeric field that you find in many WaveLab Elements windows and dialogs.

CC121 Advanced Integration Controller

You can use Steinberg's CC121 Advanced Integration Controller to control WaveLab Elements.

This section describes the WaveLab Elements factory preset for the CC121. For detailed information on how to use the controller, refer to the manual that came with the CC121. Note that the CC121 was originally designed for Cubase. The following mapping combines the WaveLab Elements functionality with the CC121 controls. The controls that are not listed in the following paragraph are not assigned to a parameter.

Channel Section

You can use all controls of the CC121 channel section, except the fader, to control the elements of the active track in a WaveLab Elements audio montage. You can use the fader for the **Master Section**.

Fader

Controls the **Master Section** fader.

PAN knob

Controls the gain of the active track.

Mute

Mutes/Unmutes the active track.

Solo

Activates/Deactivates solo for the active track.

CHANNEL SELECT

Selects the previous/next track in the audio montage.

To move the cursor to the previous/next clip edge in the audio montage, hold **Alt**. To move the cursor to the previous/next region edge, hold **Shift**. To move the cursor to the previous/next marker in the **Audio Editor**, hold **Ctrl/Cmd**.

EQ Section

With the EQ section you can easily control the Steinberg Studio EQ plug-in.

If **EQ TYPE** is activated on the CC121, you can adjust the parameters of the focused Studio-EQ. All necessary EQ parameters, such as **Q/F/G** of each band, **EQ TYPE** selection, and **ALL BYPASS** on/off can be set. You can switch to WaveLab Elements navigation mode by deactivating **EQ TYPE**. In WaveLab Elements navigation mode, you can access alternative functions, such as scrolling, zooming, and switching between windows.

EQ TYPE activated:

Bandwidth knobs (Q)

Adjusts the Q (bandwidth) of each EQ band.

Frequency knobs (F)

Adjusts the center frequency of each EQ band.

Gain knobs (G)

Adjusts the gain of each EQ band.

ON

Activates/Deactivates the EQ bands.

ALL BYPASS

Activates/Deactivates bypass for all plug-ins in the **Master Section**.

EQ TYPE deactivated:

LOW ON

Opens the **Audio Editor**.

LOW-MID ON

Opens the **Audio Montage** window.

HIGH ON

Opens the preferences tab.

EQ-1 knob for the EQ Gain (G)

Scrolls left/right on the timeline.

EQ-2 knob for the EQ Gain (G)

Adjusts the horizontal zoom on the timeline.

EQ-3 knob for the EQ Gain (G)

Adjusts the vertical zoom on the timeline.

EQ-4 knob for the EQ Gain (G)

Scrolls tracks on the **Audio Montage** window or scrolls vertically on the **Audio Editor**.

EQ-1 knob for the EQ Frequency (F)

Scrolls left/right on the overview timeline of the **Audio Editor**.

EQ-2 knob for the EQ Frequency (F)

Horizontally zooms in/out on the overview timeline of the **Audio Editor**.

EQ-3 knob for the EQ Frequency (F)

Vertically zooms in/out on the overview timeline of the **Audio Editor**.

EQ-4 knob for the EQ Frequency (F)

Vertically scrolls on the overview timeline of the **Audio Editor**.

Transport Section

In this section you can control the transport functions of WaveLab Elements.

Previous button

Moves the cursor position to the left.

Rewind button

Moves the edit cursor position to the left.

Forward button

Moves the edit cursor position to the right.

Next button

Moves the cursor position to the right.

Cycle button

Activates/Deactivates Cycle mode.

Stop button

Stops playback. Press again to move the cursor to the previous start position. Press a third time to move the cursor to the beginning of the project.

Play button

Starts playback.

Record button

Press once to open the **Recording** dialog. Press again to start the recording. Press a third time to stop recording. The recorded file opens in the **Audio Editor**.

Function Section

In this section, you can adjust functions, such as fades and envelope level, by using the VALUE knob.

VALUE knob

Rotate this knob to adjust the assigned function. Press the knob to reset the parameter to its default value.

FUNCTION button 1

Adjusts the fade in settings of the active clip.

FUNCTION button 2

Adjusts the fade out settings of the active clip.

FUNCTION button 3

Adjusts the envelope level of the active clip.

FUNCTION button 4

The element clicked last in the **Nudge** section of the **Edit** tab in the **Audio Montage** window is assigned to this button.

AI Knob Section

WaveLab Elements can be controlled with the AI knob of Steinberg's CC121, CI2+, and CMC-AI controllers. With the AI knob, you can control the parameter that the mouse points to.

NOTE

The AI knob only works on parameters that are automatable.

In this section you can control parameters via the AI knob.

AI KNOB

Controls the VST 3 plug-in parameters, emulates the mouse wheel, for example, for scrolling, and lets you edit a focused numeric field. To control a parameter with the AI knob, move the mouse cursor over the parameter that you want to control, and move the AI knob. You can activate/deactivate the emulation of the mouse wheel and the editing of the focused numeric field in the **Options** tab.

LOCK

When the mouse cursor points to a parameter, press LOCK to control this parameter regardless of the position of the mouse cursor.

CUBASE READY Indicator

The CUBASE READY indicator has no function in WaveLab Elements.

Foot Switch Section

The foot switch has the same function as **Shift** . Press and hold the foot switch while turning the AI knob to fine tune parameters.

WaveLab Elements Concepts

This chapter describes general concepts that you will use when working with WaveLab Elements. Getting accustomed with these procedures allows you to work more effectively with the program.

RELATED LINKS
General Editing Rules on page 26
Basic Window Handling on page 28
Startup Dialog on page 26

General Editing Rules

The common editing operations apply to any Steinberg product.

- To select and move interface items, and to select ranges, click and drag with the mouse.

- Use the keys of your computer keyboard to enter numeric values and text, to navigate lists and other selectable interface items, and to control the transport functions.

- Common operations like cut, copy, paste, or the selection of multiple items can be performed using standard keyboard shortcuts.

NOTE

The behavior of your product is also governed by your preference settings.

RELATED LINKS
WaveLab Elements Concepts on page 26

Startup Dialog

When WaveLab Elements starts, the **Startup** dialog opens, where you can select which file or template you want to open.
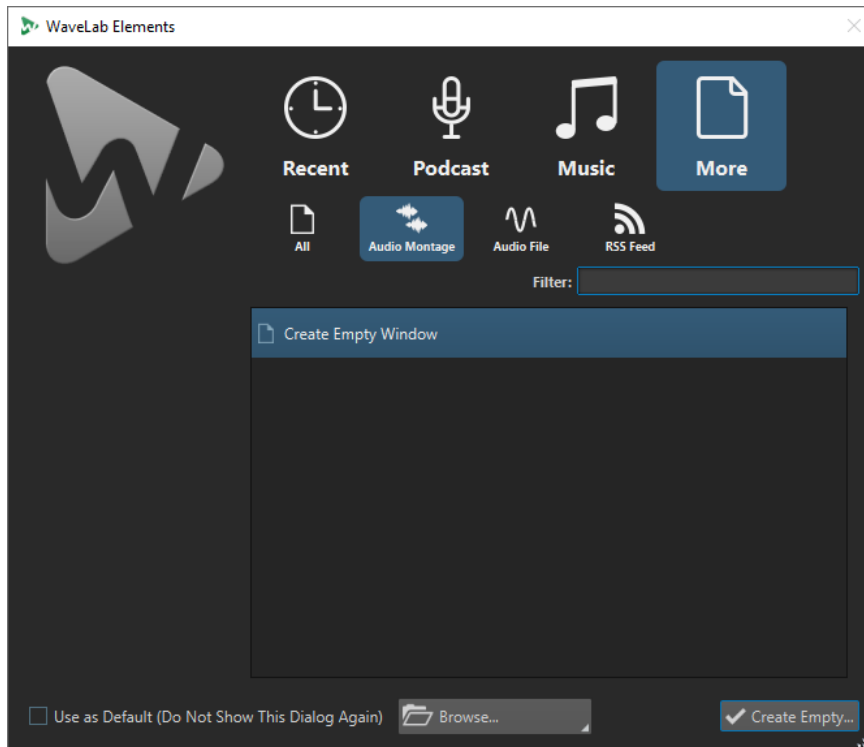
In the **Startup** dialog, you can select the file type that you want to open. You can open recently used files or create new files from templates.

The following file types are available:

- **Audio Montage**
- **Audio File**
- **RSS Feed**

Recent

Recently Used Files

Opens the files that you last used in WaveLab Elements.

List of recently used files

Allows you to open recently used files. To open a recently used file, select the file and click **Open**.

Templates

Create Empty Window

Creates an empty WaveLab Elements window.

Other Options

Use as Default (Do Not Show This Dialog Again)

If this option is activated, the option that you select is used from now on and the startup screen does not open anymore. To display the **Startup** dialog, even if this option has been activated, press **Ctrl/Cmd** when starting WaveLab Elements.

Browse

Allows you to select the files that you want to open.

Create Empty

Creates an empty WaveLab Elements window.

Basic Window Handling

WaveLab Elements follows the basic guidelines for the Windows/macOS interface, which means that Windows/macOS standard procedures apply.

RELATED LINKS
WaveLab Elements Concepts on page 26

Selecting Audio

Almost all types of editing and processing that you perform in WaveLab Elements operate on the audio selection. There are numerous ways to make an audio selection.

- To select the whole audio file, double-click it.
- To select an audio file that contains markers, triple-click it.

RELATED LINKS
Selecting a Range by Dragging on page 28
Selecting Channels in Audio Files on page 30

Selecting a Range by Dragging

The standard way to select a range in the wave window or montage window is to click and drag.

CHOICES

- To select a range, drag all the way to the left or right side of the wave window or montage window.

  The waveform scrolls automatically, allowing you to select larger sections than what can be shown in the wave window. The speed of the scrolling depends on how far from the window edge you are.

- To resize a selection range horizontally or vertically in the wave window, click and drag the selection box.
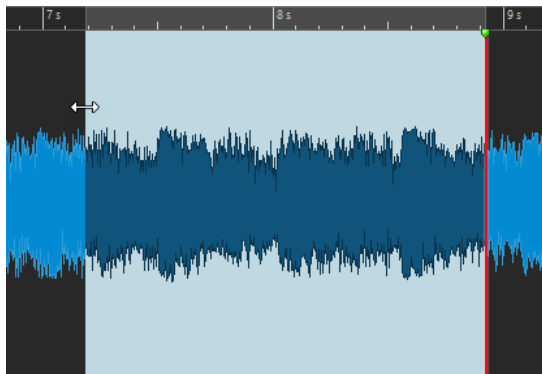
- To resize a selection range vertically in the montage window, click and drag the selection box.

RELATED LINKS
Selecting Audio on page 28

Audio Range Selection in an Audio File

You can edit, process, or play back selections of an audio file.

- To access the audio range selection options, in the **Audio Editor**, select the **Edit** tab.

The following selection options are available in the **Time Selection** section:

All

Selects the entire waveform.

Toggle

Toggles the selection range on/off.

Extend

Opens a menu where you can select the following options for creating or extending selection ranges:

- **Extend to Start of File** extends the selection to the start of the audio file. If there is no selection, a selection is created from the edit cursor position.

- **Extend to End of File** extends the selection to the end of the audio file. If there is no selection, a selection is created from the edit cursor position.

- **Extend to Previous Marker** extends the left edge of the selection to the nearest marker to the left or the start of the audio file. If there is no selection, a selection is extended until the previous marker position.

- **Extend to Next Marker** extends the right edge of the selection to the nearest marker to the right or the end of the audio file. If there is no selection, a selection is extended until the next marker position.

- **Extend to Cursor** extends the selection to the edit cursor position.

- **From Start of File Until Cursor** selects the range between the start of the audio file and the edit cursor position.

- **From Cursor to End of File** selects the range between the edit cursor position and the end of the audio file.

- **From Cursor to Previous Marker** selects the range between the edit cursor position and the previous marker or the start of the audio file.

- **From Cursor to Next Marker** selects the range between the edit cursor position and the next marker or the end of the audio file.

- **Shift Selection to the Left** moves the selection by its length to the left.

- **Shift Selection to the Right** moves the selection by its length to the right.

- **From Playback Position to End** creates a selection range from the playback position to the end of the selection or to the end of the file if there is no selection. If playback is not active, the position of the edit cursor is used.

- **From Start to Playback Position** creates a selection range from the playback position to the start of the selection or to the start of the file if there is no selection. If playback is not active, the position of the edit cursor is used.

- **Double Selection Length** doubles the length of the current selection range.

- **Halve Selection Length** halves the length of the current selection range.

Channels

Opens a menu where you can select the following options:

- **Extend to All Channels** extends the current selection range to all channels.
- **Left Channel Only** reduces the current selection range to the left channel only.
- **Right Channel Only** reduces the current selection range to the right channel only.

Regions

Opens a menu where you can select the following options:

- **Loop Region** selects the range between the two loop markers that encompass the edit cursor.
- **Generic Region** selects the range between the two generic markers that encompass the edit cursor.

RELATED LINKS
Audio Editor on page 40

Selecting Channels in Audio Files

In the **Audio Editor**, you can select individual channels, both channels of a stereo file, or channel clusters of a multichannel audio file. This allows you to apply an operation to one channel only, to both channels of a stereo file, or to channel clusters of a multichannel file.

CHOICES

- Which channel is selected when you click in the wave window depends on where you click.

  The edit cursor shows which channel is selected. The mouse pointer indicates which channel will be affected.

  - To select the left channel, click the upper half of the left channel.
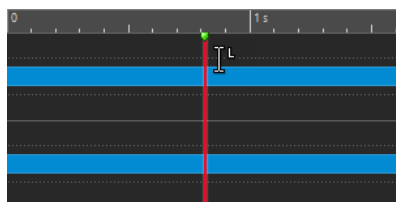
  - To select both channels, click the middle area between the left and the right channel.
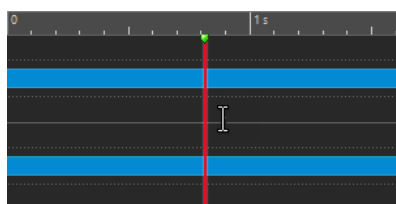
  - To select the right channel, click the lower half of the right channel.
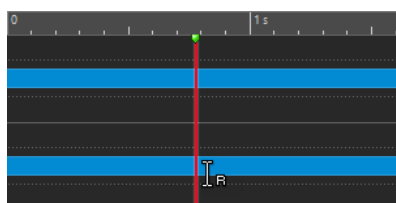
- To toggle between selecting all channels and selecting individual channels when you click the wave window, click **Toggle Channel Selection Mode** to the left of the timeline.
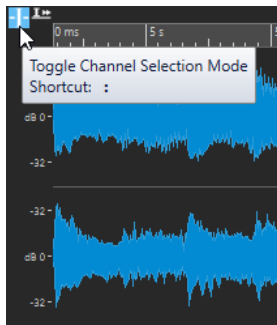
- To move the edit cursor to the next/previous channel, press **Tab** or **Tab**-**Shift**.

Moving the Selection Range to Other Channels

You can move the selection range that you have made for a channel to all channels or move the selection range to another channel.

PROCEDURE

1. In the wave window of the **Audio Editor**, select a range.

2. Do one of the following:

   - On the **Edit** tab, in the **Time Selection** section, click **Channels**, and select **Extend to All Channels**, **Left Channel Only**, or **Right Channel Only**.

   - In the channel control area, click the channel to which you want to move the selection range.
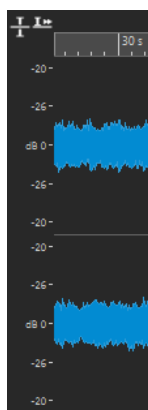
   - To extend the selection range from its original channel cluster vertically to other channel clusters, **Shift**-click the channel cluster to which you want to extend the selection range.

   - To move the selection range to the next/previous channel via key commands, press **Tab** or **Tab**-**Shift**.

   - To move the selection range to another channel via mouse, press **Ctrl/Cmd**-**Shift**, and drag the selection to another position.

Selecting in the Overview of the Audio Editor

The ranges that you select in the overview of the **Audio Editor** also apply to the main view.

PROCEDURE

● In the wave window of the **Audio Editor**, hold down `Ctrl/Cmd` and click and drag in the overview.

Moving a Selection Range

If a selection range has the correct length, but the wrong position, you can move it.

PROCEDURE

1. In the wave window, hold down `Ctrl/Cmd`-`Shift`.

2. Click in the middle of the selection and drag to the left/right.

Extending and Reducing the Selection

You can resize a selection range in the wave window or the montage window.

There are several ways to extend/reduce the selection:

Using Mouse and Key Commands

● To extend the selection, select a range, `Shift`-click outside the selection range, and drag to the left/right. You can also click and drag the edges of the selection range to the left/right.

● To extend the selection to the previous/next boundary (marker or start/end of file), press `Shift` and double-click the non-selected area between the boundaries.

Using Only Key Commands

● To move the start or end of a selection in the wave window to the left or right, hold down `Shift` and press the `Left Arrow`/`Right Arrow`. To move it in bigger steps, hold down `Shift` and press `Page Up` or `Page Down`.

● To extend a selection to the previous or next boundary in the wave window (marker or start/end of the audio file), hold down `Ctrl/Cmd`-`Shift` and press the `Left Arrow` or `Right Arrow`.

Deleting Selections

There are several options for deleting a selected range.

Audio Editor

The following options can be found on the **Edit** tab in the **Cutting** section.

Crop

Removes the data outside the selection.

Delete

Removes the selection. The audio to the right of the selection is moved to the left to fill the gap.

Audio Montage Window

The following option can be found on the **Edit** tab in the **Removal** section.

Erase Selected Range

Erases the clip parts inside the selection range on the active track, without filling the gap.

Delete Selected Clip/Delete Selected Range

If there is a selection range, the clip parts inside the selection range on the active track are deleted and the right section of the clips is moved to the left to fill the gap.

If there is no selection, the selected clips are deleted.

Sliders

At various places in WaveLab Elements, slider controls are available to change parameters. There are a number of ways to change the value of a slider.

- Position the mouse over the slider and use the mouse wheel without clicking. Hold **Ctrl/Cmd** while using the mouse wheel to scroll faster. This modifier also applies to the zoom wheels. To move a slider, click and drag it.
- To move the slider handle to a position, click the slider at any position.
- To move the slider handle in smaller steps, right-click or click below the handle. Keep the mouse button pressed to automatically step to the next value.
- To reset the slider to the default value, if available, **Ctrl/Cmd**-click the slider, or click using the third mouse button, or double-click the handle.

RELATED LINKS

Renaming Items in Tables

You can rename items in tables in the **Markers** window, and in the **CD** window.

- To rename an item, double-click it or select it, and press **Return**, and enter the new name.
- To rename the previous/next item, press **Up Arrow** or **Down Arrow**. This way you move the focus on the previous/next item, while staying in the edit mode.

Tab Groups

With tab groups, you can view the content of different files, tool windows, or meters at the same time, without having to navigate through different windows. Each tab group has its own content and tab bar.

You can have two file tab groups.

Empty File Tab Groups
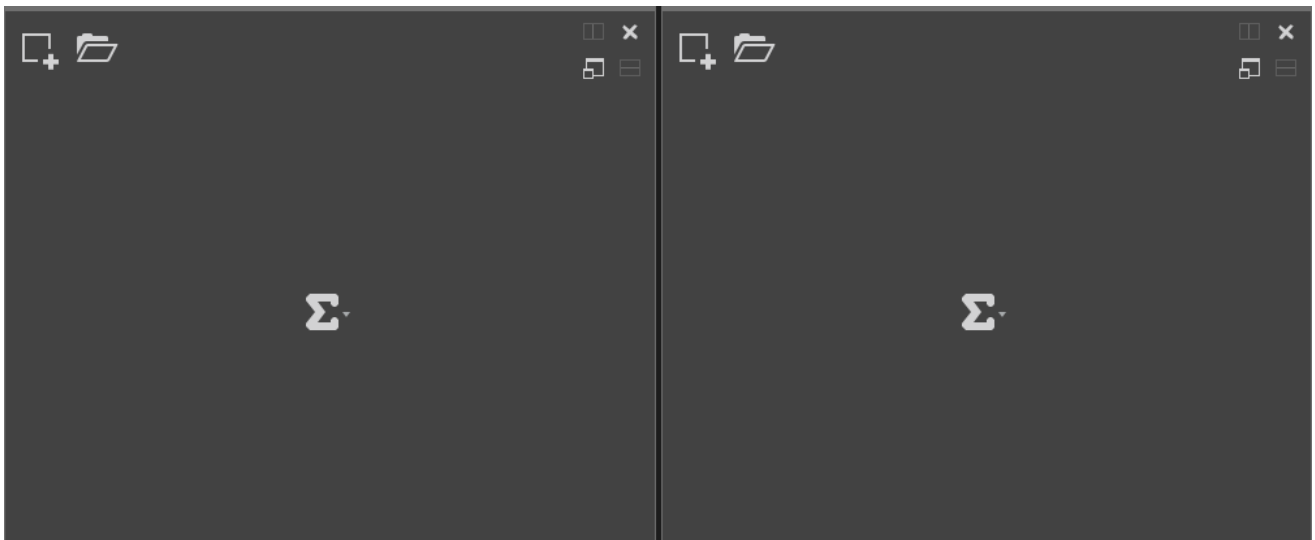
File Tab Groups with Audio Montages

Creating File Tab Groups

PROCEDURE

1. In the top right of a file tab window, open the **Tab Group** pop-up menu.
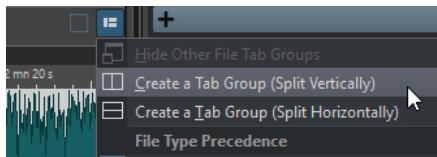
2. Select **Create a Tab Group (Split Vertically)** or **Create a Tab Group (Split Horizontally)**.

RELATED LINKS
Tab Groups on page 34
Using Tab Groups on page 35

Creating File Tab Groups in Empty Tab Groups

PROCEDURE

- In the top right of an empty file tab group, click **Create a Tab Group (Split Vertically)** or **Create a Tab Group (Split Horizontally)**.

RELATED LINKS
Tab Groups on page 34
Using Tab Groups on page 35

Using Tab Groups

The **Tab Group** button in the top right of each tab window allows you to maximize, move, and close tab groups. Tabs are used differently depending on the type of window.

Tool Window Tab Groups

- To hide a tool window tab group, open the **Tool Window Tab Group Options** pop-up menu and select **Hide All**.
- To reorder tabs in a tab group, drag the tab horizontally to a new position on the tab bar.
- To dock the tab group to another location, open the **Tool Window Tab Group Options** pop-up menu and select **Dock Tab Group Elsewhere**. Now you can select where to dock the tab group.

File Tab Groups

- To close a file tab group, click the **Tab Group** button and select **Hide All**.
- To reorder tabs in a tab group, drag the tab horizontally to a new position on the tab bar.
- To move a tab to another project, drag the tab to another project.
- To paste the content of a tab into an audio file, drag the tab onto the waveform. The tab is inserted at the cursor position.
- To maximize the active file tab group, open the **File Tab Group Options** pop-up menu, and select **Hide Other File Tab Groups**.

To show all file tab groups, open the **File Tab Group Options** pop-up menu, and select **Show Other File Tab Groups**.

You can also double-click the file tab header of a tab group to show/hide other file tab groups.

RELATED LINKS
Tab Groups on page 34
Creating File Tab Groups on page 35

Peak Files

A peak file (extension `.gpk`) is automatically created by WaveLab Elements each time an audio file is modified or opened in WaveLab Elements for the first time. The peak file contains information about the waveform and determines how it is drawn in the wave window or the montage window.

Peak files speed up the time it takes to draw the corresponding waveform. By default, the peak file is saved in the same location as the audio file.

RELATED LINKS
Rebuilding Peak Displays on page 36

Rebuilding Peak Displays

Normally, peak files are automatically updated when the date of the peak file is older than the date of the audio file. However, it can happen that the date of the audio file is not automatically updated. In this case you can force a rebuild of the peak file.

PROCEDURE

1. In the **Audio Editor**, select the **View** tab.
2. In the **Peaks** section, click **Rebuild Display**.

RELATED LINKS
Peak Files on page 36
View Tab (Audio Editor) on page 108

Companion Files

Companion files (extension `.vs`) contain **Master Section** presets and view settings for audio files. If this feature is activated when you save a file, the settings are recreated the next time that you load the file.

Companion files are only available in the **Audio Editor**.

The following view settings are included in companion files:

● Window size and position

● Zoom level

● Scroll position

RELATED LINKS
Storing Companion Files in Another Location on page 37

Storing Companion Files in Another Location

By default, companion files are saved in the same location as the audio file. However, you can select another file location.

PROCEDURE

1. Select **File** > **Preferences** > **Folders**.

2. Click **Companion Files** and specify another file location.

RELATED LINKS

Processing Precision

WaveLab Elements can load audio samples in many formats but processes them internally as 64-bit float samples.

Mixing inside WaveLab Elements is also done in 64-bit float. 32-bit PCM samples can be transferred to 64-bit float and back.

Plug-ins are processed in 64-bit float by default. You can also set the plug-in processing to 32-bit float.

You can set up the processing precision for plug-ins and for temporary files in the **Audio** tab of the **Global Preferences**.

NOTE

Processing in 64-bit float means double precision but slightly longer process time than 32-bit float.

Temporary files in 64-bit float have double precision but take longer to read and write than 32-bit float and their file size is twice as big.

RELATED LINKS

EBU Loudness Standard R-128

The EBU loudness recommendation R-128 establishes well-defined methods to measure loudness, dynamics, and peak values, and also defines reference values to achieve for these measurements. Though the reference values are intended for the broadcast world, the measurement methods are helpful in any application dealing with audio and loudness control.

WaveLab Elements supports these audio measurements in many places, for metering, audio analysis, and processing.

Loudness Measurement

This method takes into account the frequency sensitivity of the human ear to loudness levels. There are 3 types of measurements:

1. Integrated loudness, also called program loudness: this reports how loud an audio piece is, on average. This measurement uses a gating method to ignore long periods of silence.

2. Short-term loudness: this measures the loudness every 1 second on an audio block of 3 seconds. This gives information about the loudest audio passages.

3. Momentary loudness: every 100 ms, a range of 400 ms of audio is measured. This gives instantaneous feedback about the loudness.

Loudness Range

This measures the dynamics of the audio signal. It reports the ratio between the loudest and the quietest (but non-silent) sections. The audio is divided into small blocks. There is one audio block every second and each block lasts 3 seconds (analyzed blocks overlap).

The top 10% of the quiet blocks and the top 5% of the loud blocks are excluded from the final analysis. The calculated loudness range is the ratio between the loudest and quietest remaining audio blocks. This measurement helps to decide if and how much compression or expansion can or should be applied to the audio.

True Peaks

When a digital signal is converted to an analog signal, the EBU R-128 recommends measuring an estimation of the real peaks, rather than relying on digital peaks, to avoid clipping and distortion. This is accomplished by over-sampling the signal 4 times and retaining the peak values.

Naming and Units

The EBU R-128 proposes naming and units conventions:

- A relative measurement, such as a value relative to a reference level: "LU" as "Loudness Unit" (1 LU is 1 dB).

- An absolute measurement, "LUFS" as "Loudness Unit Full Scale". 1 LUFS can be understood as 1 dB in the AES-17 scaling.

When WaveLab Elements relates to the EBU R-128 loudness, these units are used rather than dB.

RELATED LINKS
Loudness Normalizer on page 164
Global Analysis on page 149
Formats Tab (Global Preferences) on page 383

Resetting Default Answers

In WaveLab Elements, you can set some dialogs and warning messages to **Do not show again**. If you want to show these dialogs and messages again, you must reset the default answers.

PROCEDURE

1. Select **File** > **Preferences** > **Global**.

2. Click **Options**.

3. Click **Reset Default Answers**.

RESULT

All message box options are reset to their default settings.

RELATED LINKS

Options Tab (Global Preferences) on page 384

Workspace Window

The **Workspace** window provides an editing and playback environment for each particular file type. Each environment contains functions that are tailored to the specific purpose of each file type.

- **Audio Editor** for viewing and editing audio files.
- **Audio Montage** window for assembling and editing audio montages.
- **RSS Feed Editor** for preparing and uploading RSS feeds.

The **Workspace** window is highly customizable to match your workflow.

Elements of the Workspace Window

The **Workspace** window contains the following elements:

- A menu bar
- Tab groups to host the files to edit. You can move the content of a tab to another tab, create a new empty tab, display the file path, and access other functions by right-clicking.
- A set of tool windows. Which tools are available depends on the file type you are working on. The tool windows can be activated/deactivated individually.

RELATED LINKS
Audio Editor on page 40
Audio Montage on page 40
RSS Feed Editor on page 41

Audio Editor

The **Audio Editor** provides tools and functions for sample-accurate audio editing, high-quality analysis, and processing.

The **Audio Editor** includes various metering tools.

The wave window gives you a graphical representation of the audio file and allows you to view, play back, and edit the file.

RELATED LINKS
Audio File Editing on page 103

Audio Montage

In the **Audio Montage**, you assemble audio clips into a montage. You can arrange, edit, and play back clips on both stereo or mono tracks.

Features include both track- and clip-based effects, volume and pan automation, and wide-ranging fade and crossfade functions.

You can place any number of clips on an audio track. A clip contains a reference to a source audio file on your hard disk, as well as start and end positions in the file.

The montage window gives you a graphical representation of clips on tracks. In it you can view, play back, and edit the tracks and clips.

RELATED LINKS
Audio Montage on page 177

RSS Feed Editor

In the **RSS Feed Editor**, you assemble, define, and publish your RSS feed to the Internet.

RELATED LINKS
RSS Feed on page 356

File Tab

The **File** tab is the control center of WaveLab Elements. Here, you can save, open, render, import, and export files. It also gives you detailed information about your files and allows you to set up the WaveLab Elements preferences.
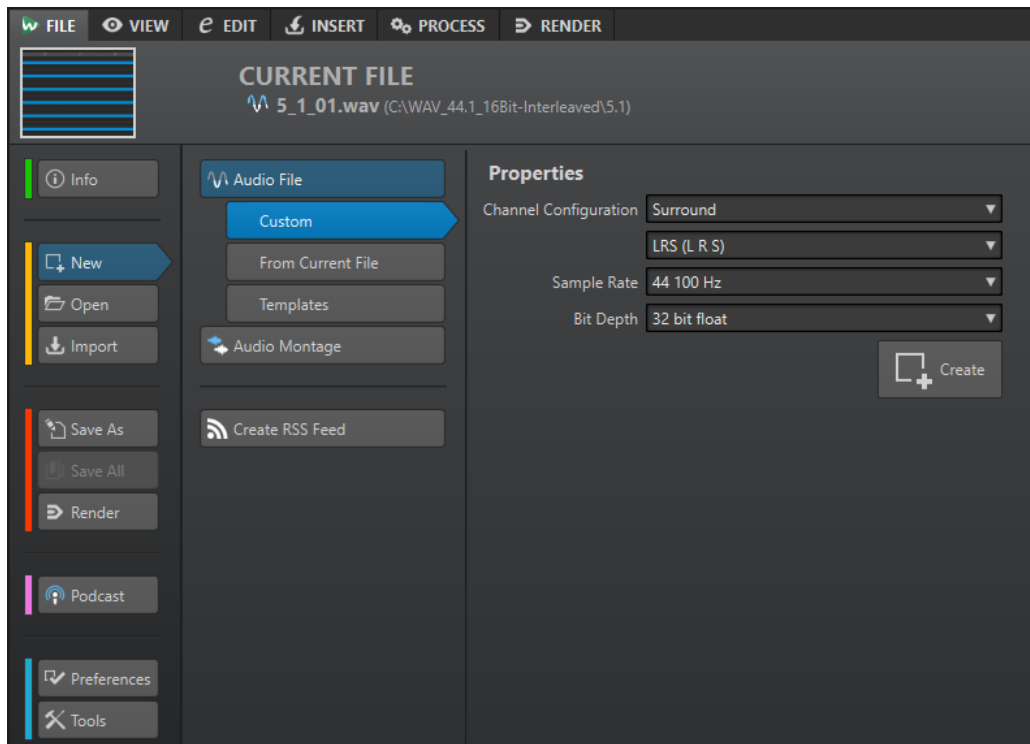
Info

Provides information about the active file and allows you to edit the audio properties of audio files and audio montages.

New

Allows you to create audio files, audio montages, or RSS feeds. You can create new files or use a template.

Open

Allows you to open audio files, audio montages, or RSS feeds.

You can also open files that you have previously copied to the clipboard in the File Explorer/macOS Finder.

Import

Allows you to open different file formats. The following formats are supported:

- **Audio File to Montage**
- **Unknown Audio**

This option allows you to specify how WaveLab Elements should interpret the format of the audio file that you want to open.

You can also import audio CD tracks from an audio CD.

Save As

Allows you to save the active file or the project. You can specify the name, file format, and location. You can also save a copy of the active file.

Save All

Allows you to save all changed files of your project at once. The file list gives you an overview of all files that have been changed.

You can use the filter to show all changed files, only audio files, or only audio montages.

Export

Allows you to render the active file.

Preferences

Allows you to view and change the preferences of WaveLab Elements. You can set up the preferences for the following parts of WaveLab Elements:

- **Global**
- **Audio Connections**
- **Shortcuts**
- **Plug-ins**
- **Remote Devices**
- **Folders**
- **Audio Files**
- **Audio Montages**

Tools

Allows you to access the following tools:

- **Data CD/DVD**
- **Batch Conversion**

RELATED LINKS

Info Tab

The **Info** tab provides information about the active file and allows you to edit the audio properties of audio files and audio montages.

- To open the **Info** tab, select the **File** tab, and click **Info**.
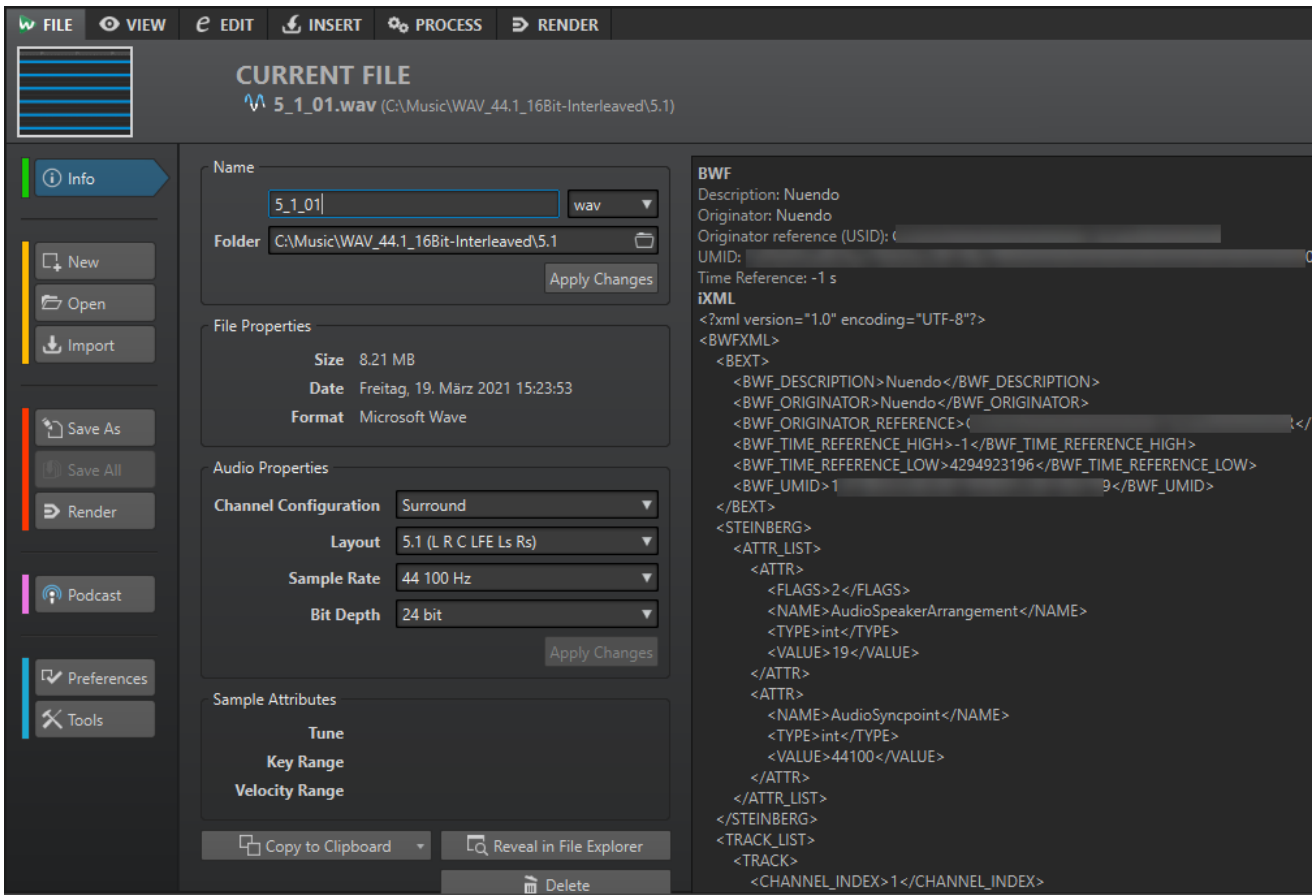
Depending on the selected file, different information and options are available.

Name

Displays the name, file extension, and file location of the active file. You can edit these attributes.

File Properties

Displays the size, date, and file format of the active file.

Audio Properties

For audio files, this displays the **Channel Configuration**, **Sample Rate**, and **Bit Depth** of the active file.

For audio montages, this displays the **Channel Configuration** and **Sample Rate** of the active file.

You can edit these attributes.

Sample Attributes (audio files only)

Displays the musical attributes tune, key range, and velocity range.

Metadata

Displays the metadata of the active file or the file that you have selected in the **File Browser** window.

Copy to Clipboard

Opens a menu from which you can select which information about the active file you want to copy to the clipboard.

Reveal in File Explorer/macOS Finder

Opens the File Explorer/macOS Finder to show the location of the active file.

Delete

Deletes the active file.

RELATED LINKS
File Browser Window on page 61

Tool Windows

Throughout WaveLab Elements there are various tool windows available that allow you to view, analyze, and edit the active file.

Generally, the content of a tool window is synchronized with the active file, with the exception of the audio meters which displays the audio file being played back. Tool windows can be docked and undocked, and saved in your custom layouts. Some tool windows are only available for specific file types.

The tool windows can be accessed via the **Tool Windows** menu.

RELATED LINKS
Opening and Closing Tool Windows on page 44

Opening and Closing Tool Windows

You can close all tool windows that you do not need for your project.

- To open a tool window, select **Tool Windows** and select a tool window.
- To close a docked tool window, right-click the tool window tab and select **Hide**.
- To close an undocked tool window, click its **X** button.

RELATED LINKS
Tool Windows on page 44

Slide-Out Windows

Slide-out windows are hidden in the frame of the **Workspace** window. When you hover the mouse pointer over the window name, the window slides out. It is hidden again, when you click anywhere else.
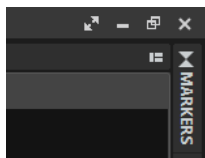
Slide-out window tab
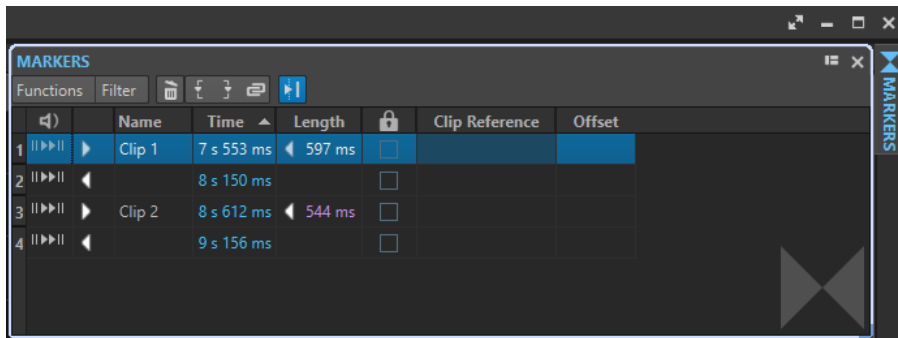
An open slide-out window

Docking and Undocking Tool Windows and Meter Windows

Tool windows and meter windows can be used as docked windows, as floating windows, or as a slide-out window. You can freely drag around the windows and dock them at various locations.

- To undock a tool window or meter window, drag the corresponding tab to another position.

    Now the tool window or meter window is a floating window which can be freely moved.

- To dock a tool window or meter window, click and hold the caption bar or click the **Options** button on the right of the caption bar and select **Dock Tab Group Elsewhere**.

    Yellow symbols indicate locations for docked windows, pink symbols indicate locations for slide-out windows. Drag the window to one of the locations.
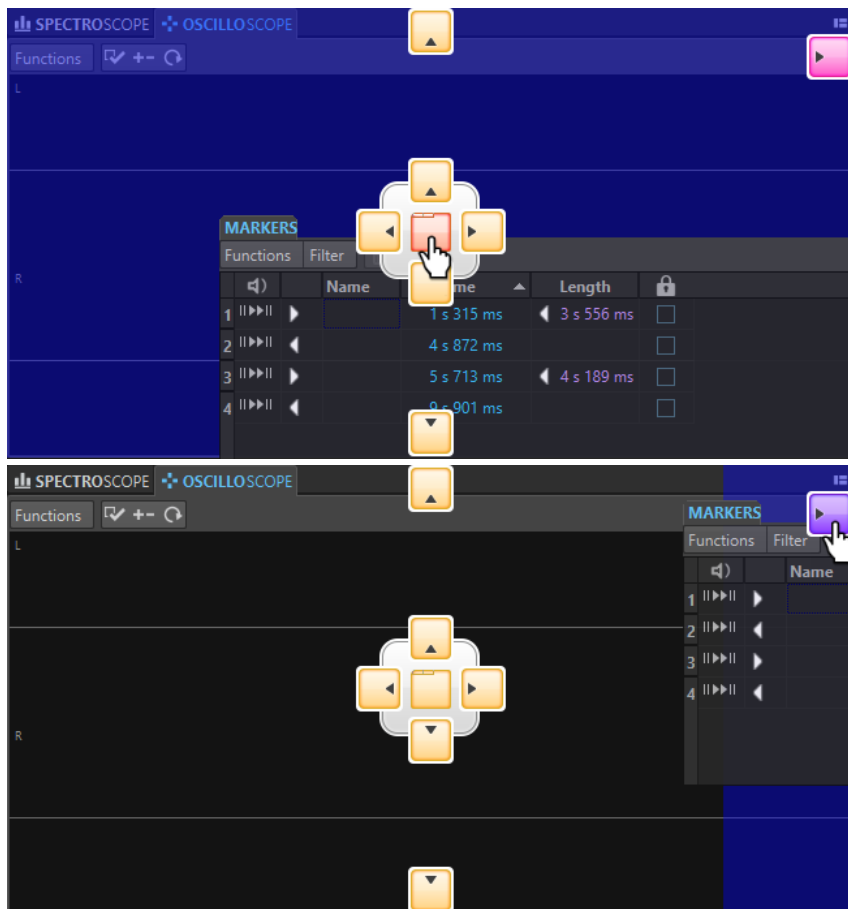
- To dock a floating tool window or meter window at its last docked position, click the **Options** button on the right of the caption bar and select **Dock to Last Place Again**.
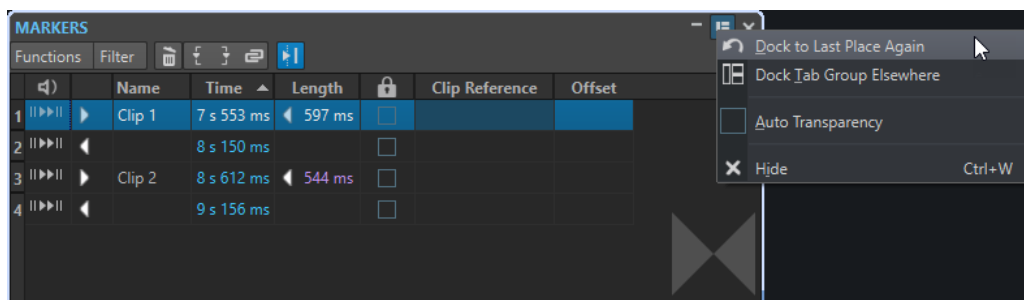
RELATED LINKS
Slide-Out Windows on page 44

Hiding the Caption Bar in Floating Meter Windows

To save screen space, the caption bar of floating meter windows can automatically be hidden if the window is not the active window. This can be set individually for each floating window.

PROCEDURE

1. In a floating meter window, click the **Options** button at the top right of the window.

2. Select **Auto Caption Bar**.
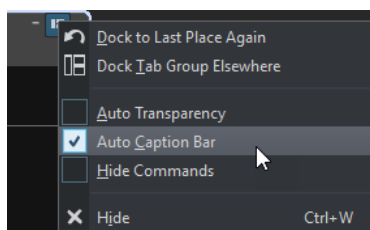
Command Bar

The command bar of file windows allows you to create, open, and save files, and undo/redo changes. You can also use the text field to quickly find and access open files, and to trigger keywords.

New

Allows you to create an audio file, audio montage, or RSS feed. You can create new files or use a template.

Open

Allows you to open an audio file, audio montage, or RSS feed.

Save

Saves the active file.

Save As

Allows you to save the active file. You can specify the name, file format, and location. You can also save a copy of the active file.

Trigger Cubase/Nuendo Update

Updates the Cubase/Nuendo project if the active file was opened via the **Edit in WaveLab** option.

Undo

Allows you to undo changes.

Redo

Allows you to redo changes that were undone.

Navigate Backwards/Navigate Forwards

In the **Audio Editor** and **Audio Montage** window, this allows you to navigate to the previous/next cursor position, zoom factor, or selection range without undoing/redoing the edit operation.

Customize Command Bar

Allows you to select the buttons that you want to display on the command bar.

Maximize Window

Maximizes the window. To restore the window size, click the button again.

Layout Options

Allows you to determine the position of the command bar and transport bar.

RELATED LINKS
[WaveLab Exchange](#) on page 349

Status Bar

The status bar at the bottom of the screen of the **Audio Editor** and the **Audio Montage** window shows information about the active window using the units specified in the rulers.

The information displayed on the status bar is updated depending on the cursor position and on the audio selection that you have made.
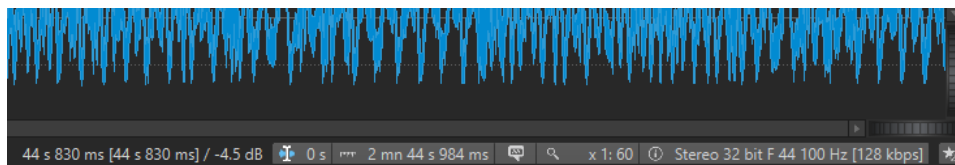
Time/Level (dB)

Displays the time of the audio file at the mouse cursor position. In the **Audio Editor**, it also displays the level.

The value in brackets shows the time from the edit cursor position to the mouse cursor position.

Audio Information at Edit Cursor

Displays the time at the position of the edit cursor. This information changes if you reposition the cursor.

● To define the cursor position, click the **Audio Information at Edit Cursor** field to open the **Cursor Position** dialog.

● To focus the cursor position, right-click the **Audio Information at Edit Cursor** field.

Audio Selection Indicator (Audio Editor)/Audio Range Indicator (Audio Montage)

In the **Audio Editor**, this displays the length of the current selection, or the total length of the audio file if no selection has been made.

In the **Audio Montage** window, this displays the length of the audio selection if a clip is selected, or the size of the audio montage.

If you have zoomed in, you can right-click the indicator to display the selected audio range, the active clip, or the whole file. Left-click the indicator to open the **Range Selection** dialog, where you can define or refine a selection.

Zoom Indicator

Displays the current zoom factor.

- To open a pop-up menu that allows you to make additional zoom settings, click the indicator.

- To open the **Zoom Factor** dialog that allows you to edit the zoom factor, right-click the indicator.

Sampler Key Indicator (Audio Editor only)

Indicates the key of the current audio file (if defined). Click the indicator to open the **Sample Attributes** window.

Audio File Properties/Audio Montage Properties

In the **Audio Editor**, this displays the bit depth and the sample rate. It also indicates whether the audio file is mono or stereo. Click the indicator to open the **Audio Properties** dialog.

In the **Audio Montage** window, this displays the sample rate of the audio montage. Click the indicator to open the **Sample Rate** dialog.

Bypass Master Section

If this option is deactivated, the **Master Section** is ignored during playback. However, rendering still takes all plug-ins into account.

Background Information

The status bar shows the progress of some background operations, such as rendering an effect. The operation can be paused or canceled using the provided buttons.
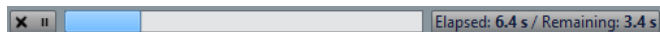
Context Menus

Throughout WaveLab Elements, various context menus are available. These menus group the commands and/or options that are specific to the active window.

The context menus appear if you right-click specific areas and are useful for speeding up your workflow.

For example, right-click a file tab to open a context menu with some relevant file options. Right-clicking the ruler of the waveform window brings up the **Time Ruler** context menu that allows you to access a number of options for changing the time ruler display format.

You can find most context menu commands on the tabs, in the file window and in the main menus, but some commands are only available in context menus. If you search for a function, right-click the current working window to check if it has a context menu.
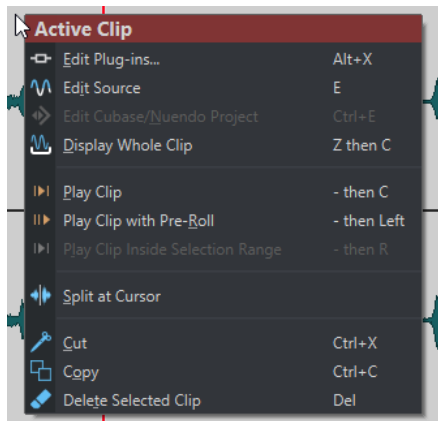
Context menu in the montage window

RELATED LINKS
Time Ruler and Level Ruler on page 49

Time Ruler and Level Ruler

In the **Audio Editor**, you can display a time and a level ruler in the wave window. In the **Audio Montage** window, you can display a time ruler in the montage window.

You can also determine which time and level units the rulers show. The following units are available:

- **Timecode**
- **Clock**
- **Samples**
- **Bars and Beats**

Time Ruler
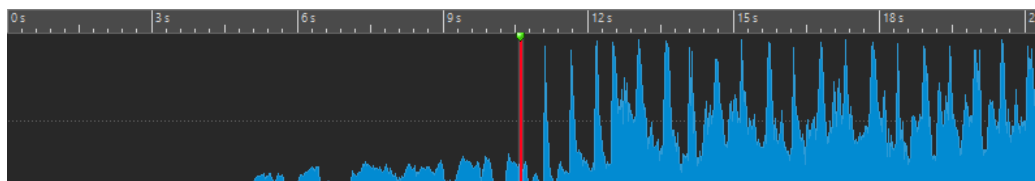
Level Ruler (Audio Editor only)
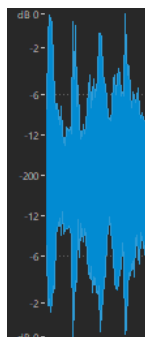
RELATED LINKS
Montage Window on page 177
Wave Window on page 103
Time Ruler and Level Ruler Options on page 50

Time Ruler and Level Ruler Options

You can specify the time and level (amplitude) formats for each ruler in each wave window and the time formats for each ruler in the montage window separately.

RELATED LINKS

Time Ruler Menu

The time ruler menu allows you to set up the time ruler display. For example, the timecode and the time format.

● To open the time ruler menu, right-click the time ruler.
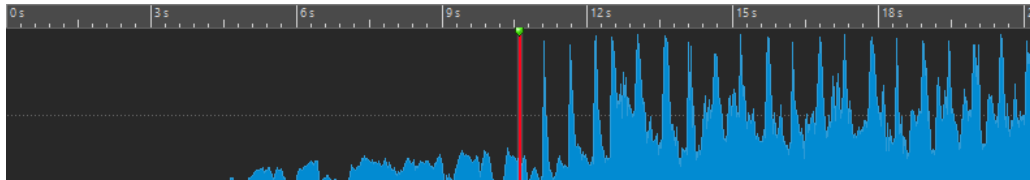
Timecode

Displays frames per second for various SMPTE timecode types and for CD resolution.

You can specify the timecode type in the **Time Format** dialog.

Clock

Displays time units. You can make additional settings for the time units in the **Time Format** dialog.

Samples

Displays positions as number of samples. The number of samples per second depends on the sample rate of the audio file. For example, at 44.1 kHz, there are 44100 samples per second. You can make additional settings for the samples in the **Time Format** dialog.

Bars and Beats

Displays bars and beats. You can make additional settings for the bars and beats in the **Time Format** dialog.

File Size (Audio Editor only)

Displays positions in megabytes. Decimals represent kilobytes.

Show grid (Audio Montage window only)

Displays vertical lines in the montage window, aligned with time ruler marks.

Time Format

Opens the **Time Format** dialog, that allows you to edit the appearance of the time ruler formats.

Save Current Settings as Default

If this option is activated, the time ruler uses the current time format in all new wave windows or montage windows.

Set Ruler's Origin to Start of File

> If this option is activated, the ruler's zero position is set to the beginning of the first sample.

Set Ruler's Origin at Cursor

> If this option is activated, the ruler's zero position is set to the current edit cursor position.

Level Ruler Menu (Audio Editor only)

The level ruler menu allows you to set up the level format of the level ruler.

- To open the level ruler menu, right-click the level ruler in the **Audio Editor**.
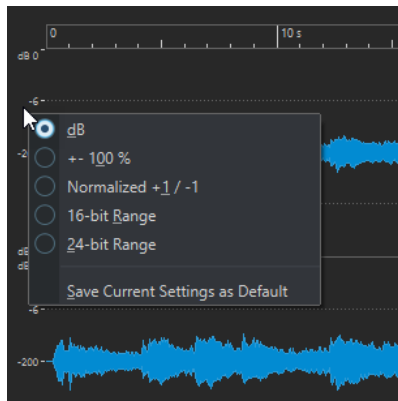
dB

> Sets the level format to decibels.

+-100%

> Sets the level format to percentage.

Normalized +1/-1

> Sets the level format to a ruler gradation corresponding to 64-bit float audio.

16-bit Range

> Sets the level format to a ruler gradation corresponding to 16-bit audio.

24-bit Range

> Sets the level format to a ruler gradation corresponding to 24-bit audio.

Save Current Settings as Default

> If this option is activated, the level ruler uses the current level format in all new wave windows.

Working With a Meter-Based Display

If your working material is tempo-based, you can select the meter format (bars, beats, and ticks) for the ruler legend. This makes it easier to find musically related cutting points.

PROCEDURE

1. In the wave window or the montage window, right-click the time ruler, and select **Bars and Beats**.

2. Right-click the time ruler, and select **Time Format**.

3. On the **Bars and Beats** tab, set the **Time Signature** and **Tempo** to values that match your audio file.

4. Set **Ticks per Quarter Note** to a number that you feel comfortable with.

    For example, this can be the same value that is used by your MIDI sequencer.

5. Click **OK**.

RELATED LINKS
Time Ruler and Level Ruler on page 49
Time Format Dialog on page 52

Setting the Edit Cursor Position

Many operations, such as playback and selection, depend on the current edit cursor position. For example, playback often starts at the edit cursor position. The current edit cursor position is indicated by a vertical flashing line.

There are various ways to move the edit cursor:

●   Click somewhere in the wave window, the montage window, or the time ruler. If you have made a selection, click the time ruler to prevent deselecting.

●   Click and drag in the time ruler.

●   Use the transport controls.

●   In the **Audio Editor** and **Audio Montage** window, select the **View** tab and use the options in the **Cursor** section.

●   Use the cursor keys.

●   Double-click a marker.

RELATED LINKS
Time Ruler and Level Ruler on page 49
Time Format Dialog on page 52

Time Format Dialog

In this dialog, you can customize the time format of the ruler. The time format of the ruler is also used in various time fields, for example, the status bar and some dialogs.

●   To open the **Time Format** dialog, right-click the ruler in the **Audio Editor** or **Audio Montage** window, and select **Time Format**.

    In the **Audio Editor**, you can set different time formats for the overview display and the main display.
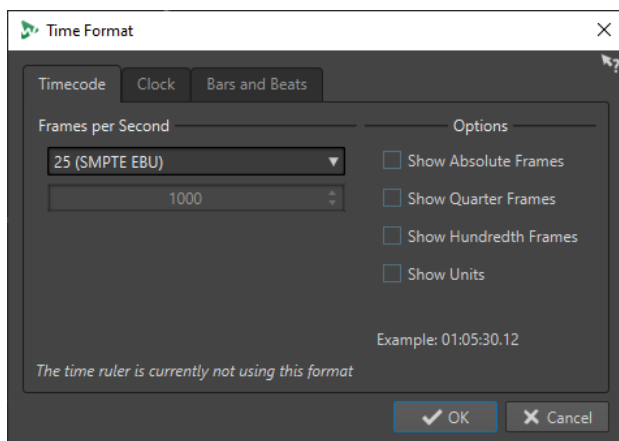
Timecode Tab

On this tab, you can configure the appearance of the **Timecode**.

Frames per Second

Lists standard frame rates. From the pop-up menu, select **Other** to enter a custom frame rate. You can also choose which frames or units are displayed.

Show Absolute Frames

Shows the time format as a number of frames, without other time elements.

Show Quarter Frames

Adds the quarter frame number to the time format.

Show Hundredth Frames

Adds the number of a hundredth of a frame to the time format.

Show Units

Adds time units to the time format of the ruler.

Clock Tab

On this tab, you can configure the appearance of the **Clock** ruler.

Show Units

Adds time units to the time format of the ruler.

Compact

Shows the time without unit indicators.

Bars and Beats Tab

On this tab, you can configure the appearance of the **Bars and Beats** ruler.

Time Signature

Lets you edit the time signature used to display the time represented as a musical notation.

Tempo

Lets you edit the tempo used to display the time represented as a musical notation.

Ticks per Quarter Note

Lets you edit the number of ticks per quarter note. These are used to display times that are compatible with your sequencer.

Show Ticks

Lets you show/hide ticks on the **Bars and Beats** ruler.

RELATED LINKS
Time Ruler and Level Ruler on page 49

Managing Tabs

A tab is a container for a file in WaveLab Elements. You can open several tabs, but only one can be active at a time. The **Tabs** context menu offer tab related options.

File Tabs

The following options are available when you right-click a file tab.
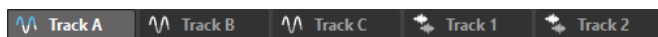
Create Audio Montage

Allows you to select **From Current Audio File** to create an audio montage with the current audio file as a clip.

Add to

Allows you to add the active file to another editor.

Close

Closes the active tab.

Close All But This

Closes all files but the active file.

Close All Audio Files

Closes all audio files.

Info

Displays information about the active file.

Reveal in File Explorer/macOS Finder

Opens the File Explorer/macOS Finder to show the location of the file.

Copy to Clipboard

Opens a menu, from which you can select which information about the file you want to copy to the clipboard.

Recent Files

Allows you to open recently used files.

RELATED LINKS
Closing Files on page 57
Creating Audio Montages from an Audio File on page 193

Activating Full Screen Mode

You can use WaveLab Elements in full screen mode.

PROCEDURE

- Select **Workspace** > **Full Screen**.

Resetting the Default Workspace Layout

PROCEDURE

- Select **Workspace** > **Reset Default Layout**.

File Handling

In WaveLab Elements, you can handle files in various ways. For example, rename files from within WaveLab Elements or save files in various ways.

RELATED LINKS
Opening Files on page 56
Saving Files on page 57
File Browser on page 60

Opening Files

You can open one or several files at the same time.

PROCEDURE

1. Select **File** > **Open**.

2. Select the file type that you want to open.

   For example, **Audio File**.

3. From the File Explorer/macOS Finder, select the files that you want to open.

4. Click **Open**.

RESULT

Every selected file opens in a file tab.

RELATED LINKS
Closing Files on page 57
Saving Files on page 57
Opening Files from the Clipboard on page 56
Automatically Opening Files in a Dedicated Tab Group on page 57

Opening Files from the Clipboard

You can open files in WaveLab Elements that you have previously copied to the clipboard in the File Explorer/macOS Finder.

PROCEDURE

1. In the File Explorer/macOS Finder, copy the files that you want to open to the clipboard.

2. In WaveLab Elements, select **File** > **Open**.

3. Click **Open Files from Clipboard**.

RESULT

The files open in new file tabs.

Automatically Opening Files in a Dedicated Tab Group

You can specify a file type for each tab group. Files that open after rendering, audio files that you open from an audio montage, or files that you open via the File Explorer/macOS Finder are automatically opened in the corresponding tab group for this file type.

- To specify a precedented file type for a tab group, click **File Tab Group Options** at the header of a tab group, and select a file type.
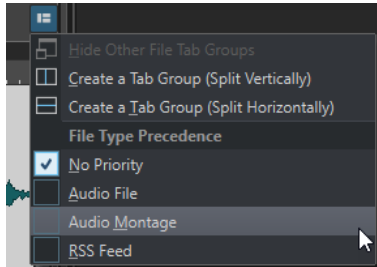
Closing Files

You can close files by closing the file tabs. You can close a single file, multiple files or all files but the selected file.

CHOICES

- To close a file tab, click the **X** button of the corresponding tab, or press **Ctrl/Cmd**-**W**, or right-click the file tab and select **Close**.
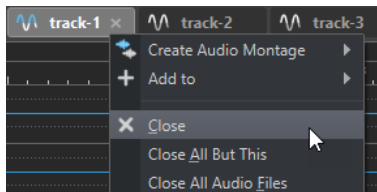
- To close a file tab without saving your changes, hold **Ctrl/Cmd**-**Shift**, and click the **X** button of the tab. This avoids having to confirm a warning message whenever you want to close an unsaved tab.
- To close all file tabs but the selected file tab, right-click a file tab and select **Close All But This**.

RELATED LINKS

Saving Files

You can save files under the same name and location or specify a new name, location, and file format when saving.

 IMPORTANT

In the **Audio Editor**, all save operations except **Save Copy** clear the undo history, which means that after saving you cannot undo or redo.

CHOICES

- Once a file has been saved, select **File** > **Save**, or press `Ctrl/Cmd`-`S` to update the file and make the changes permanent.
- If you want to specify a new name, location, and/or file format, select **File** > **Save As**.

RELATED LINKS

Tab Change Indicators

The colored tab corner gives information on whether a file is saved or not, and whether the file has been rendered in Cubase.

White

The file is not modified.

Green (Audio Editor only)

The file uses a decoded file format and is saved.

Red

The file has been modified and changes have not been saved yet.

Yellow

The file has been rendered in Cubase.

Unsaved changes indicator

When you have made changes to a file, an asterisk is displayed next to the file name until you save the file.
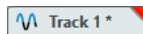
Saving Multiple Files at Once

You can save some or all open files at once.

PROCEDURE

1. Open the **File** window and click **Save All**.

2. Select the files that you want to save.

3. Click **Save**.

Saving Copies of Files

You can save copies of files that you are working on.

PROCEDURE

1. Select **File** > **Save As**.

2. Specify a name and location.

3. Right-click **Save** and select **Save Copy**.

Reverting to Saved File

You can revert the file that you are working on back to its last saved state. This undoes all the changes made to the file since it was last saved.

PROCEDURE

1. Select **File** > **Open**.

2. Select the file type that you want to open.

3. Click **Revert to Saved File**.

4. In the warning dialog, click **Yes** to revert to the last saved state.

RESULT

The last saved version of the file is loaded from disk.

Automatic Backups

You can automatically create backups of your files to prevent data loss.

For example, if you select **Save As** and specify a file name that is already used in that folder, you will be asked if you want to replace the existing file or replace the existing file and rename the old file. If you click **Replace and Keep Old**, the backup name of the audio file that is replaced will be the original name, with `.bak` added at the end.

Saving Audio Montages

The saving operations for audio montages are the same as for audio files. However, there are things to note when saving audio montages.

● Audio montage files only contain references to audio files. If you want to rename audio files that are referenced by audio montages, rename the audio files in the **Info** window of the **Audio Editor**. All clip references are updated automatically.

● If the audio montage contains clips that refer to untitled audio files, save these audio files before saving the audio montage.

RELATED LINKS
Renaming Files on page 60
Saving Files on page 57

Deleting Files

You can delete the active file from within WaveLab Elements.

PREREQUISITE

The file that you want to delete is not copied to the clipboard, is not pasted into another file that is open, and is not open in another application.

PROCEDURE

1. Open the file that you want to delete.

2. Select the **File** tab.

3. Click **Info**.

4. Click **Delete**.

5. Click **OK**.

RESULT

The file, including its peak and marker files, is deleted.

File Renaming

You can rename a file and update all references automatically. For example, if you rename an audio file named **India** to **Sitar**, all open files that reference the file **India** are updated to reference the file as **Sitar**.

Audio files, peak files, and marker files are also renamed accordingly.

RELATED LINKS
Peak Files on page 36
Renaming Files on page 60

Renaming Files

You can rename files from within WaveLab Elements.

PREREQUISITE

If you want to rename a file that is referenced by other files, open the files that reference the file that you are about to rename in WaveLab Elements.

PROCEDURE

1. Open the file that you want to rename.

2. Do one of the following:

- Select the **File** tab, click **Info**, specify a new **Name**, **Folder**, and/or file extension, and click **Apply Changes**.
- Press **F2**, specify a new **Name**, **Folder**, and/or file extension, and click **OK**.

RELATED LINKS
File Renaming on page 60
File Tab on page 41

File Browser

The **File Browser** window allows you to browse files from within WaveLab Elements. The **Auto Play Mode** is useful for speeding up the process of auditioning sound files.

The **File Browser** window provides you with all the standard browsing functions. It features additional controls to audition audio files and any marker defined regions. You can use it to open or insert files by dragging them to another location.

You can also choose to only view specific file types.

RELATED LINKS
File Browser Window on page 61

File Browser Window

In this window, you can browse files and open them in WaveLab Elements.

● To open the **File Browser** window, select **Tool Windows** > **File Browser**.
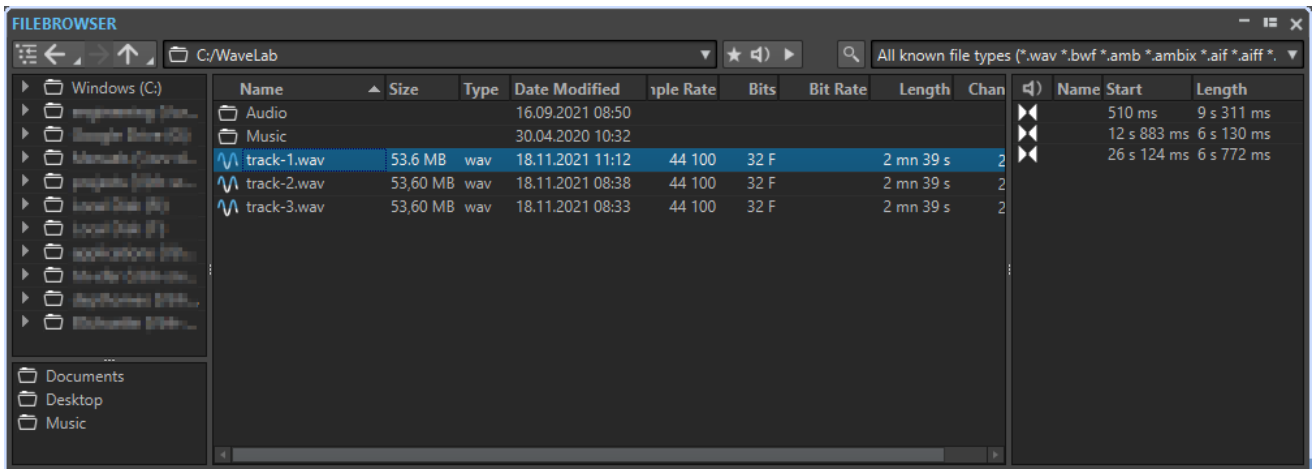
Show Current Folder in Folder Tree

Synchronizes the folder tree to the file list, so that the folder that is selected in the file list will also be shown in the folder tree.

Back/Forward/Parent Directory

Allows you to navigate through the list and file hierarchy.

Location

This menu allows you to select a file location to browse and lists the recently used locations.

Play through Master Section

If this option is activated and you play back the selected audio file, the audio file is played back through the **Master Section** plug-ins.

Auto-Play Mode

If this button is activated, playback starts automatically when you select a file.

Play Selected Audio File

Plays the selected audio file.

Search

If this button is activated, you can enter text in the search field. If it is deactivated, you can search specific file formats.

File type list

Allows you to select which file type and file format to display.

Folder tree

Shows the folders that are available on your computer.

Favorite folders

The favorite folders list allows you to quickly access folders. Each file type has its own favorite folder. You can add folders to the favorite folders list by dragging them from the folder tree to the favorite folders area, or by right-clicking a folder and selecting **Add to Favorite Folders List**.

File list

Shows the following information about each file:

- **Name** shows the name of the audio file.
- **Size** shows the size of the audio file.
- **Type** shows the file type of the audio file.
- **Date Modified** shows the date on which the audio file was last saved.
- **Sample Rate** shows the sample rate in Hz.
- **Bits** shows the bit depth in bits. "32F" means 32-bit float and "64F" means 64-bit float.
- **Bit Rate** shows the bit rate in kbps.
- **Length** shows the length of the audio file.
- **Channels** shows the number of channels.

When you select an audio file in the **File Browser** window, the corresponding metadata is displayed in the **Metadata** window and the metadata section of the **Info** tab. When you click elsewhere, the **Metadata** window displays the metadata of the selected audio file, audio montage, or batch process.

Reveal in File Explorer/Reveal in macOS Finder

If you right-click in the file list, you can select **Reveal in File Explorer/Reveal in macOS Finder** to open the selected file in the File Explorer/macOS Finder.

Create Folder

If you right-click in the file list, you can select **Create Folder** to add a new folder for structuring your files.

Audio Regions

If the selected file contains markers, the markers are displayed in the audio regions section.

If the audio regions section is hidden, select a file that contains markers, and click **Show Audio Regions**.

To hide the audio regions section, right-click it and select **Hide**.
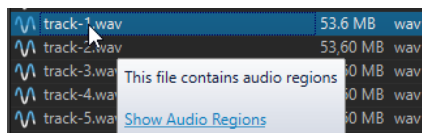
RELATED LINKS

Adding Folders to the Favorite Folders List

The favorite folders list in the **File Browser** window allows you to quickly access folders. Each file type has its own favorite folder.

PROCEDURE

- In the **File Browser** window, do one of the following:

- Drag a folder from the folder tree to the favorite folders area.

- Right-click a folder and select **Add to Favorite Folders List**.

- Right-click the favorite folders area and select **Add Selected Folder to Favorite Folders List** to add the currently selected folder to the favorite folders list.

RELATED LINKS
[File Browser Window](#) on page 61

Switching Between Files

You can have multiple files open and switch between them.

CHOICES

- To bring a file to the front, click the corresponding tab.
- To switch between the files, hold **Ctrl/Cmd**, and press **Tab** continuously.
- To switch back and forth between the last two active files, press **Ctrl/Cmd** - **Tab**. Between each step you have to release all keys.
- To switch backwards, press **Ctrl/Cmd** - **Shift** - **Tab**.
- To toggle between the active file and the last edited file, press **F5**.

Recently Used Files

All files that you have recently used in WaveLab Elements are saved in a list. This helps you to gain fast access to recent projects.

Opening Recently Used Files

You can open recently used files via the **File** menu or the **Recent Files** tab, which displays more files and offers additional options.

PROCEDURE

1. Select **File** > **Open**.

2. Select the file type that you want to open.

3. Click **Recent Files**.

4. Optional: Use the search field to enter the name of the file that you are looking for.

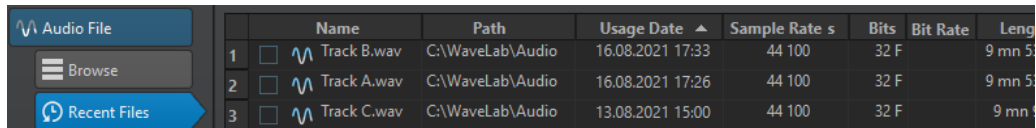5. Select the file that you want to open.

6. Click **Open**.

RELATED LINKS
[Recent Files Tab](#) on page 64

Recent Files Tab

This tab allows you to view and manage all the files that you have recently used in WaveLab Elements. You can search for files, open multiple files at once, and remove individual files or files that cannot be located.

- To open the **Recent Files** tab, select **File** > **Open**, select one of the file types, and click **Recent Files**.

Only Show Files Created by WaveLab Elements

Only shows the files that have not been opened since they were created by WaveLab Elements. For example, a file that is rendered has this status until it is opened.

Search field

Lets you search for text in the **Name** or **Path** column, depending on which column is selected.

Remove Non-Existing Files

Removes those files from the list that cannot be located on the medium.

Remove Selected Files

Removes all selected files from the list.

Open

Opens the selected files.

Filtering Recently Used Files by Name

The search field in the **Recent Files** tab allows you to filter the files list by name.

- To specify whether the **Name** or the **Path** column is used, click the **Name** or **Path** column header.
- To search for a file, enter the text that you want to search for in the search field.
- To switch the focus from the search field to the list of recently used files, press `Down Arrow`.
- To switch the focus from the list of recently used files to the search field, press `Ctrl/Cmd`-`F`.

Setting the Number of Recently Used Files to Display

You can specify how many files should be displayed in the recently used files list.

PROCEDURE

1. Select **File** > **Preferences** > **Global**.

2. Select the **Display** tab.

3. In the **History** section, set the maximum number of items to be listed on the **Recent File** menu.

Temporary Files

WaveLab Elements creates temporary files to store intermediary results of the audio file processing and for the undo/redo functions. You can specify where WaveLab Elements saves its temporary files and the processing precision of temporary files.

By default, WaveLab Elements creates temporary files in 32-bit float. Use the **64 bit float** option if you want to create 64-bit float audio files or 32-bit PCM files.

NOTE

Temporary files in 64-bit float have double precision but take longer to read and write than 32-bit float and their file size is twice as big.

You can change the processing precision of temporary files with the **Temporary Files** option. You can set this option in the **Global Preferences** on the **Audio** tab.

RELATED LINKS
Specifying Folders for Opening and Saving Files on page 83
Audio Tab (Global Preferences) on page 382

Undoing and Redoing

You can undo and redo as many operations as you like, even after saving the file. The only limitation is the available hard disk space.

When undoing or redoing any operation in the **Audio Editor** or the **Audio Montage** window, the zoom factor, cursor position, scroll position, clip selection status, and time range are restored to the state before the operation.

●   To undo or redo an operation, click **Undo** or **Redo** in the title bar of the **Audio Editor** or **Audio Montage** window.

RELATED LINKS
Version History on page 65
Undoing Effect Changes on page 242

Version History

The version history allows you to view a history of all versions and to revert to a previous version. In the **History** window, you can see all versions of the audio montage or audio file that you are working on.

In the WaveLab Elements history, each version consists of an audio file or audio montage that can be restored. Each edit to the audio file or audio montage creates a new version.

The **Audio Montage** window and the **Audio Editor** have independent **History** windows.

You can undo and redo operations, and restore previous versions, even after saving the file. The initial version is at the top of the list, the most recent version is at the bottom of the list.

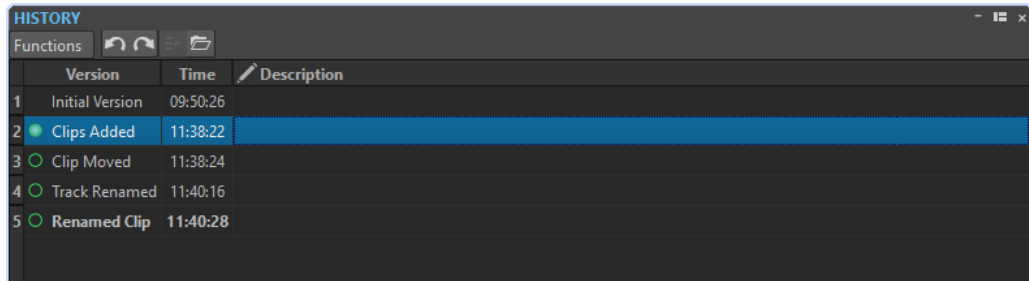The name of the operation that created the version is shown in the **Version** row in the **History** window.

RELATED LINKS
History Window for Audio Montages on page 66
History Window for Audio Files on page 67

History Window for Audio Montages

This window shows all versions of the audio montage that you are working on. You can undo and redo operations, and restore previous versions. The initial version is at the top of the list, the most recent version is at the bottom of the list.

- To open the **History** window, open the **Audio Montage** window and select **Tool Windows** > **History**.

History List

In the history list, the following columns are available:

Version

Shows the type of operation that created the corresponding version.

Time

Shows the time of the operation.

Description

Allows you to add a description to a version.

Functions Menu

The following options are available via the **Functions** menu:

Undo/Redo

Undoes/Redoes the last operation. You can use undo/redo even after saving.

Restore Selected Version

Restores the selected version.

Open Selected Version in New Tab

Opens the selected version in a new tab.

Delete Selected Version

Deletes the selected version from the history.

Clear History

Clears the history. This frees up memory and hard disk space. If you clear the history, you cannot undo any previous operations.

Keep Undone Versions

By default, if you revert to a previous version, all versions that were created after the selected version are deleted. To keep all versions in the history even if you revert to previous versions, activate **Keep Undone Versions**.

EXAMPLE

You have done edits A, B, C, and D. Now you undo edits C and D. Then you do edit E. In the default version history, the history now contains the edits A, B, and E. If **Keep Undone Versions** is activated, the history contains the edits A, B, C, D, and E. That is, even after undoing steps, you can still revert to the undone versions.

History Window for Audio Files

This window shows all versions of the audio file that you are working on. You can undo and redo operations, and restore previous versions. The initial version is at the top of the list, the most recent version is at the bottom of the list.

● To open the **History** window, open the **Audio Editor**, and select **Tool Windows** > **History**.

History List

In the history list, the following columns are available:

Version

Shows the type of operation that created the corresponding version.

Time

Shows the time of the operation.

Description

Allows you to add a description to a version.

Functions Menu

The following options are available via the **Functions** menu:

Undo/Redo

Undoes/Redoes the last operation. You can use undo/redo even after saving.

Restore Selected Version

Restores the selected version.

Open Selected Version in New Tab

Opens the selected version in a new tab.

Delete Selected Version

Deletes the selected version from the history.

Clear History

Clears the history. This frees up memory, hard disk space, and any involved audio files. If you clear the history, you cannot undo any previous operations.

Keep Undone Versions

By default, if you revert to a previous version, all versions that were created after the selected version are deleted. To keep all versions, activate **Keep Undone Versions**.
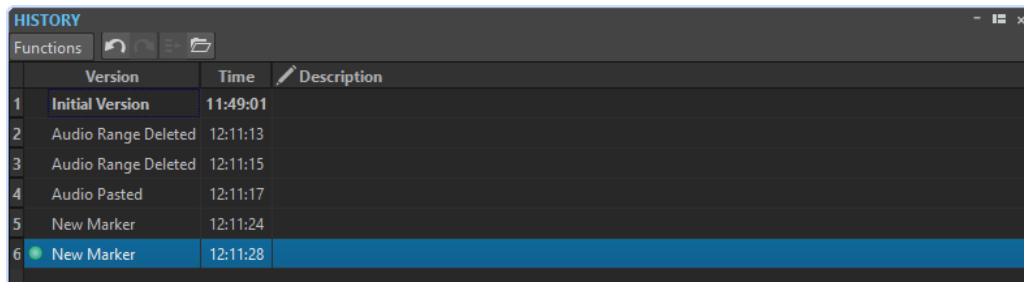
For example: You have done edits A, B, C, and D. Now you undo edits C and D. Then you do edit E. In the default version history, the history now contains the edits A, B, and E. If **Keep Undone Versions** is activated, the history contains the edits A, B, C, D, and E. That is, even after undoing steps, you can still revert to the undone versions.

Navigating Backwards and Forwards

In audio files and audio montages, you can navigate to the previous/next cursor position, zoom factor, and selection range without undoing/redoing the edit operation.

● To navigate backwards or forwards, click **Navigate Backwards** ⬅ or **Navigate Forwards** ➡ in the title bar of the **Audio Editor** or **Audio Montage** window.

Value Editing

At various places in the program, numerical values can be edited by using a combination of text fields and knobs.

Values are sometimes composed of several elements, for example, 12 mn 30 sec 120 ms. Each value can be edited by using any of the following methods:

● To change a value, click in a value field and type a new value, or click the small arrows in the value field.

● To change the value by one unit at a time, press **Up Arrow** or **Down Arrow**.

● To change the value using the mouse wheel, position the mouse cursor over a value, and use the mouse wheel, or use the AI knob of your MIDI controller.

● To change the value with the mouse, click a value and drag the mouse up or down.

● To jump to the maximum and minimum values, press the **Home** or **End** key, respectively.

● To move from one element of the value to another, press **Left Arrow** or **Right Arrow**.

Drag Operations

WaveLab Elements makes much use of drag-and-drop techniques to perform various operations, some of which can only be performed this way. These are referred to as drag operations in this documentation.

● To drag an object, click and hold with the mouse when positioned on the object and drag it. Drop the object by releasing the button.

Many types of objects can be dragged between different source and destination locations, for example, files, text, clips, items in a list, and markers.

NOTE

It is also possible to drag and drop files from WaveLab Elements to Steinberg's Nuendo.

● To reorder a tab within its own tabbed group, drag horizontally. To move a tab to another window, drag vertically.

● To open a file, drag it from the **File Browser** window of WaveLab Elements, from the File Explorer/macOS Finder, or from another application to the tab bar.

- To create a copy of a file, drag its tab vertically to another position of the tab bar, then press **Ctrl/Cmd** , and release the mouse button.

- You can dock and undock tool windows and meter windows via dragging.

RELATED LINKS
Docking and Undocking Tool Windows and Meter Windows on page 45

Dragging in the Audio Editor and Audio Montage Window

You can perform different operations depending on where you drag in the **Audio Editor** or **Montage** window.

- To insert an audio file in another audio file, drag the title bar of the file onto the waveform of another file. You can also drag an audio file from the **File Browser** window, the File Explorer/ macOS Finder, or from another application into the **Audio Editor**.

- To move a marker, drag it to another position on the time ruler.

- To create a copy of a marker, press **Shift** , and drag it to another position on the time ruler.

- To delete a marker, drag it upwards outside the time ruler.

- To copy an audio selection, drag a selected region of audio onto the waveform area of the same file or another file.

- To change the extent of a selection range, position the edit cursor at the start/end of the selection range, and drag to the left or right.

- To move the edit cursor without losing the current selection, and to snap it to an anchor, press **Shift** , and move the mouse near the audio file/montage cursor. The mouse cursor shape changes and you can drag the cursor left and right.

- To move the edit cursor without changing or losing the current selection, press **Shift** , click the edit cursor, and drag it to another position.

- To scroll the waveform horizontally, click the bar above the time ruler and drag left or right. You can also click anywhere on the waveform using the 3rd mouse button, and drag left or right.

- To create a generic marker from a selected text, drop the text that you have selected in an external application onto the time ruler. The text becomes the marker name.

- To create a stereo copy of a mono file, or a mixed copy of a stereo file, drag a tab to another position of the tab bar, press **Ctrl** - **Alt** (Windows) or **Ctrl** - **Opt** (Mac), and release the mouse button.

RELATED LINKS
Wave Window on page 103
Montage Window on page 177
File Browser Window on page 61

Dragging in the RSS Feed Window

You can reorder episodes in the episodes list via dragging.

- To reorder episodes in the episodes list, drag them to another position.

RELATED LINKS
RSS Feed on page 356

Dragging in the Master Section

You can reorder effects in the Master Section via dragging.

- To change the order of processing in the Master Section, drag effects between different effects slots.

RELATED LINKS
Master Section Window on page 266

Zooming in the Workspace Window

You can zoom in the **Workspace** window according to the standard zoom techniques.

Zooming Horizontally

- When you zoom out as far as possible, the entire file fits in the window.
- When you zoom in as far as possible, each sample occupies several pixels on the screen. This allows for sample-accurate editing of waveforms.

Zooming Vertically

- When you zoom out as far as possible, the height of the wave fits in the window.
- As you progressively zoom in, the display only shows a part of the total height. The vertical scrollbar lets you adjust exactly which section is shown. Check the ruler to see which part of the waveform is shown in the display.
- To optimize the vertical zoom of the waveform, press **Ctrl/Cmd**, the time ruler, keep the mouse button pressed, and drag the mouse up or down.

High Zoom Level

- When the zooming level is very high, each sample is shown with a step and a bullet. The steps show the real digitized state, while the bullets make it easier to see the samples, especially for zeroed samples.
- The curve also represents an estimation of the analog reconstructed signal to give hints on true peaks.
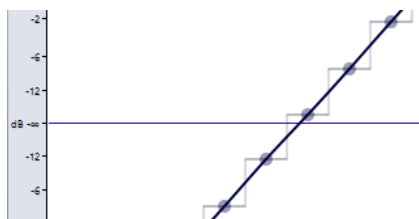

Zooming in the Overview and Main View Sections (Audio Editor Only)

- You can have different zoom levels in the overview and in the main view section. In the overview, a range indicator on the time ruler indicates which section of the file is displayed in the main view.
- To adjust the zoom level, drag the edges of the range indicator.
- To scroll in the main view, drag the range indicator. The range indicator is located at the top of the overview display.
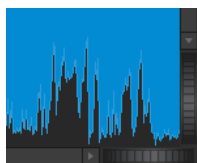
- To adjust the zoom level using the scrollbar, drag the edges of the scrollbar.
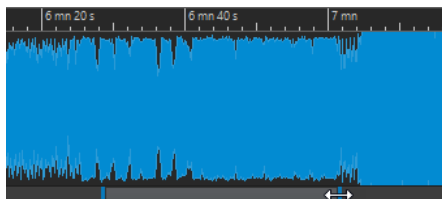
Zooming Using the Zoom Controls

Both the main view and the overview have horizontal and vertical zoom controls.


- To zoom horizontally, click the **Horizontal Zoom** control, and drag left or right, or use the mouse wheel.
- To fully zoom-out, double-click the **Horizontal Zoom** control.
- To zoom vertically, click the **Vertical Zoom** control, and drag up or down, or use the mouse wheel.
- To switch between an optimized height and the default zoom, double-click the **Vertical Zoom** control.

RELATED LINKS

Zooming Using the Zoom Tool

The **Zoom** tool is used to zoom in a specific section of the waveform so that it occupies the entire wave window. This is only available in the **Audio Editor**.
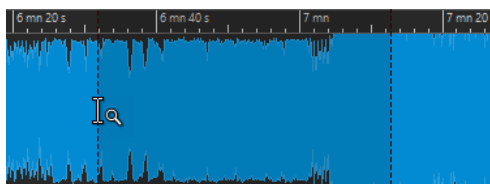
RELATED LINKS

Using the Zoom Tool in the Main View

The selection that you make in the main view of the wave window is magnified and fills up the entire main view.

PROCEDURE

1. In the **Audio Editor**, select the **View** tab.

2. In the **Zoom** section, click **Zoom**.

3. In the main view of the wave window, click and drag left or right, and release the mouse button.

   The selected part of the wave now occupies the entire main view.

RELATED LINKS

Using the Zoom Tool in the Overview

The selection that you make in the overview of the wave window is displayed in the main view.

PROCEDURE

● In the overview of the wave window, click and drag left or right, and release the mouse button.

RESULT

The selected range of the waveform is shown in the main view.

RELATED LINKS

Zooming Using the Mouse

With the mouse, you can change the zoom factor by clicking and dragging or by using the mouse wheel.

● To zoom horizontally, in the wave window or the montage window, position the mouse cursor over the time ruler, click, and drag up or down.

● To zoom horizontally while maintaining the cursor position, position the mouse cursor over the time ruler, press **Shift**, and drag up or down.

   For this, you can also use the mouse wheel. Press **Ctrl/Cmd** - **Shift**, point at a waveform, and use the mouse wheel.

● To zoom horizontally around the mouse cursor position using the mouse wheel, press **Ctrl/Cmd**, point at a waveform, and use the mouse wheel.

● To zoom horizontally around the edit cursor position, press **Ctrl/Cmd** - **Shift**, point at a waveform, and use the mouse wheel.

● To zoom vertically using the mouse wheel, press **Shift**, point at a waveform, and use the mouse wheel.

Audio Editor Only

- To zoom vertically, in the wave window, position the mouse cursor over the level ruler, click, and drag left or right.
- To reset the vertical zoom to 0 dB, double-click the level ruler.
- To set the vertical zoom to the best value, that is, the current minimum and maximum displayed samples, make sure that the level ruler is set to 0 dB, and double-click the level ruler.

RELATED LINKS
Zooming in the Workspace Window on page 70

Zooming Using the Keyboard

A quick way to zoom the active wave or montage window is to use the arrow keys on the computer keyboard.

- To zoom horizontally in the active wave window or montage window, press **Up Arrow** or **Down Arrow**.
- To zoom vertically in the active wave/montage window, hold **Shift**, and press **Up Arrow** or **Down Arrow**.
- To zoom vertically to fit the available height, press **Ctrl/Cmd** - **Shift** - **Up Arrow**.
- To zoom out fully, press **Ctrl/Cmd** - **Down Arrow**.
- To zoom in fully, press **Ctrl/Cmd** - **Up Arrow**.

RELATED LINKS
Global Preferences on page 379
Zooming in the Workspace Window on page 70

Zoom Options

The zoom options allow you to quickly access various zoom settings.

The zoom options are available in the **Audio Editor** and the **Audio Montage** window on the **View** tab in the **Zoom** section.

Time

Opens a pop-up menu that allows you to adjust the zoom to display the selected time range. **Zoom in 1:1** zooms in so that one pixel on the screen represents one sample.

To edit the zoom factor, click **Edit Zoom Factor**. This opens the **Zoom Factor** dialog, where you can edit the following settings:

- **Set Time Range** allows you to specify the time range that you want to display.
- **Samples per Screen Point** allows you to specify how many audio samples are summarized in each screen point.
- **Screen Points per Sample** allows you to specify how many screen points are used to represent a single audio sample.

Zoom

Activates the **Zoom** tool that allows you to define a time range that is zoomed in.

Zoom Selection

Zooms the window so that the current selection occupies the entire montage window.

Display Whole Clip (Audio Montage window only)

Adjusts the view to display the active clip.

View All

Displays the entire audio range.

Microscope

Zooms in as far as possible.

Zoom in Audio (10x)/Zoom out Audio (10x)

Zooms in/out in big steps.

Zoom in Audio/Zoom out Audio

Zooms in/out in small steps.

Level

Adjusts the zoom to only display samples below the selected dB value.

Optimize Vertical Zoom (Audio Editor only)

Changes the vertical zoom factor so that the peaks are clearly visible. This adjustment is done according to the section of the wave that is visible in the wave/montage window.

Reset Zoom to 0 dB

Adjusts the zoom to display audio levels up to 0 dB.

Zoom in Vertically/Zoom out Vertically

Zooms in/out to show waveforms with a lower/higher level.

RELATED LINKS

Zooming in Audio Montages

Zooming options in the **Montage** window are almost similar to those in the **Audio Editor**. However, there are additional zooming options for tracks.

RELATED LINKS

Zoom Buttons in the Audio Montage

The zoom buttons in the **Audio Montage** window allow you to apply zoom presets.

- To set the zoom setting to fit the active clips in 25%, 50%, or 100% of the available space, click the corresponding buttons.

Zoom to fit the selected clips in 50% of the available space
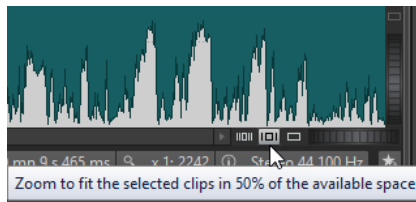
- To select a specific area, click **Ctrl/Cmd**, and drag the rectangle over the tracks and clips that you want to zoom in on.
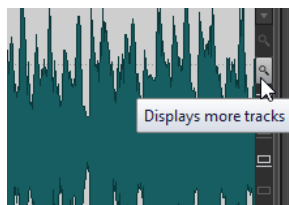
RELATED LINKS
Zooming in Audio Montages on page 74
Displaying More or Less Tracks in Audio Montages on page 75

## Displaying More or Less Tracks in Audio Montages

You can zoom in and zoom out to display more or less tracks in the **Audio Montage** window.

- To display more tracks, click the smaller magnifying glass icon.

- To display fewer tracks, click the larger magnifying glass icon.
- To make a single track fit the whole montage window, click the down arrow in the lower middle area of the track control area, and select **Zoom In** from the **Track Settings** pop-up menu.

  To zoom out again, click the down arrow in the lower middle area of the track control area, and select **Zoom Out**.
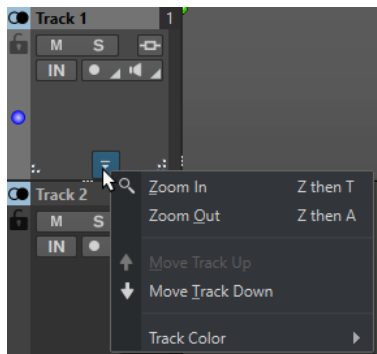
You can also right-click track, and select **Display Whole Clip** from the pop-up menu.

RELATED LINKS
Zooming in Audio Montages on page 74
Track Control Area on page 178
Zoom Buttons in the Audio Montage on page 74

Presets

You can create presets to save commonly used settings. WaveLab Elements provides a selection of factory presets that can be used by most dialogs.

You can save customized presets. The next time that you load the program, the presets are available.

Presets are saved as single files and can be organized in subfolders. The root folder of the preset is different for each type of preset and cannot be changed.

RELATED LINKS
Saving Presets on page 76
Loading Presets on page 76
Saving Default Presets for VST Plug-ins on page 78

Saving Presets

You can save presets and load them later.

PROCEDURE

1. Open the dialog that you want to use and modify the parameters.

2. Open the **Presets** pop-up menu and select **Save As**.

3. Optional: Click the folder icon and enter a name for the subfolder that you want to use as the location for this preset.

4. Type in a name.

5. Click **Save**.

RELATED LINKS
Loading Presets on page 76

Loading Presets

To apply a saved preset or a factory preset to a dialog or plug-in, you must load the preset.

PROCEDURE

1. In the dialog, open the **Presets** pop-up menu.

2. Select the preset that you want to apply.

RELATED LINKS
Saving Presets on page 76

Modifying Presets

You can modify presets and save the changes.

PROCEDURE

1. Open the dialog that you want to use.

2. Load the preset that you want to modify.

3. Modify the parameters of the dialog.

4. Open the **Presets** pop-up menu and select **Save**.

Deleting Presets

PROCEDURE

1. Open the dialog that you want to use.

2. Select the preset that you want to delete.

3. Open the **Presets** pop-up menu and select **Organize Presets**.

4. In the File Explorer/macOS Finder, select the preset file that you want to delete, and press **Delete** .

Temporary Presets

Some dialogs allow you to save and load up to 5 temporary presets. This is useful if you want to quickly test and compare different settings.

RELATED LINKS
Saving Presets Temporarily on page 77
Restoring Temporary Presets on page 77

Saving Presets Temporarily

PROCEDURE

1. Open the dialog that you want to use and make your settings.

2. Open the **Presets** pop-up menu.

3. From the **Store Temporarily** submenu, select a slot.

RELATED LINKS
Temporary Presets on page 77
Restoring Temporary Presets on page 77

Restoring Temporary Presets

PROCEDURE

1. Open the dialog in which you have saved a preset.

2. Open the **Presets** pop-up menu.

3. From the **Restore** submenu, select a preset.

RELATED LINKS
Temporary Presets on page 77
Saving Presets Temporarily on page 77

Saving Default Presets for VST Plug-ins

You can save your effect parameter settings for VST 3 and VST 2 plug-ins as the default effect preset. This allows you to load your parameter settings automatically every time you create a new instance of the effect.

PROCEDURE

1. Open the plug-in for which you want to customize the default preset.

2. At the top of the plug-in window, click the **Presets** button.
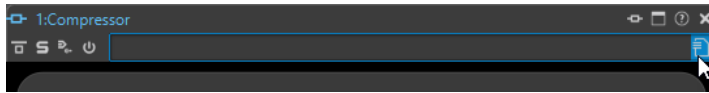
3. Do one of the following:

    ● For VST 3 plug-ins, select **Default Preset** > **Save as Default Preset**.

    ● For VST 2 plug-ins, select **Default Bank** > **Save as Default Bank**.

RESULT

The effect settings are saved as the default preset. Every time that you open a new instance of the effect, the default preset is loaded automatically.

RELATED LINKS
Loading Default Presets on page 78
Removing Default Presets on page 78
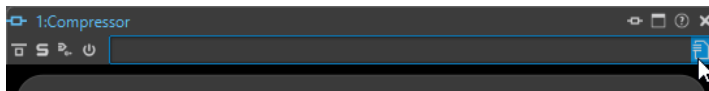
Loading Default Presets

You can load the plug-in parameter settings that you have saved as the default preset.

PROCEDURE

1. Open the plug-in for which you want to load the default preset.

2. At the top of the plug-in window, click the **Presets** button.

3. Do one of the following:

    ● For VST 3 plug-ins, select **Default Preset** > **Load Default Preset**.

    ● For VST 2 plug-ins, select **Default Bank** > **Load Default Bank**.

RELATED LINKS
Saving Default Presets for VST Plug-ins on page 78
Removing Default Presets on page 78

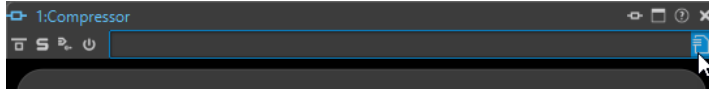# Removing Default Presets

You can remove the preset that you have saved as the default preset.

PROCEDURE

1. Open the plug-in for which you want to remove the default preset.

2. At the top of the plug-in window, click the **Presets** button.

3. Do one of the following:

- For VST 3 plug-ins, select **Default Preset** > **Remove Default Preset**.
- For VST 2 plug-ins, select **Default Bank** > **Remove Default Bank**.

RESULT

The next time that you open a new instance of the selected plug-in, the factory default preset is applied.
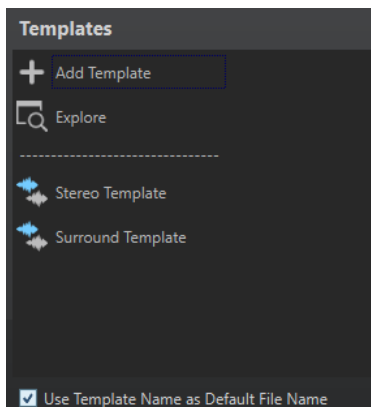
RELATED LINKS

Templates

You can save file settings that you regularly use as templates. Templates are useful when creating new audio files, audio montages, or RSS feeds.

Templates Tab

This tab shows all templates, and allows you to create and open templates.

- To open the **Templates** tab, select **File** > **New**, select a file type, and click **Templates**.

List of the available templates

Lists all saved templates.

Add Template

Allows you to add a new template or update an existing template.

Explore

Opens the folder where the template files are located. Here, you can rename and delete templates.

Use Template Name as Default File Name

If this option is activated and you click **Add Template**, a new file is created and uses the name of the template. If this option is deactivated, the name of the new file is "untitled".

Creating Templates

You can create a template from an active audio montage, audio file, or RSS feed and use it as a basis for newly created files.

PROCEDURE

1. Select **File** > **New**.

2. Select the file type for which you want to create a template.

3. Click **Templates**.

4. In the **Templates** tab, do one of the following:

   ● To create a new template, click **Add Template**, make your settings, and click **Create**.

   ● To update an existing template, click **Add Template**, enter the name of the template that you want to update, and click **Create**.

5. Optional: If you want to use the template name as the default file name, activate **Use Template Name as Default File Name**.

6. When saving or updating an audio file template or an audio montage template, you can make additional settings.

   ● When saving an audio file template, the **Audio File Template** dialog opens. Here, you can select whether WaveLab Elements should attach an audio file format.

   ● When saving an audio montage template, the **Audio Montage Template** dialog opens. Here, you can select whether to include track plug-ins, clips, and/or markers. Also select whether WaveLab Elements should attach an audio file format.

Audio File Template Dialog

The **Audio File Template** dialog displays the audio properties of the audio file template that you are creating. You can also specify whether to always associate a specific audio file configuration with optional metadata when creating an audio file template or not.

● To open the **Audio File Template** dialog, select **File** > **New**, click **Audio File**, and click **Templates**. In the **Templates** tab, click **Add Template**.
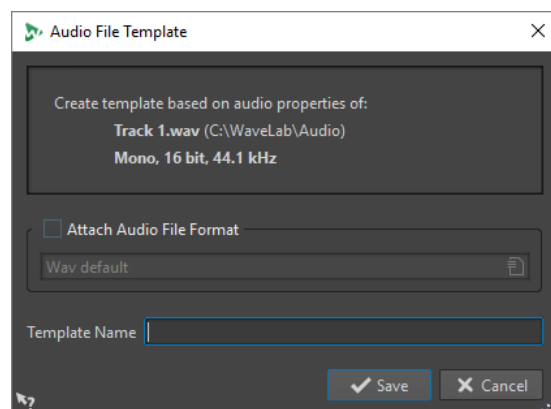
Attach Audio File Format

If this option is activated, whenever you open the **Render** or **Save As** dialogs, the audio file configuration specified below is proposed by default.
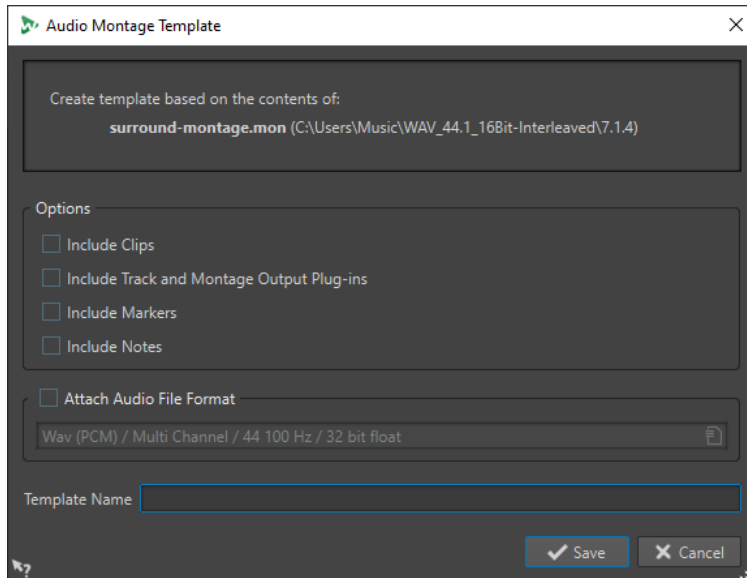
Template Name

Allows you to enter a name for the template.

Audio Montage Template Dialog

In the **Audio Montage Template** dialog, you can set various options when creating an audio montage template.

- To open the **Audio Montage Template** dialog, select **File** > **New**, click **Audio Montage**, and click **Templates**. In the **Templates** tab, click **Add Template**.

Include Clips

If this option is activated, clips are saved in the template.

Include Track and Montage Plug-ins

If this option is activated, track plug-ins and montage plug-ins are saved in the template.

Include Markers

If this option is activated, markers are saved in the template.

Include Notes

If this option is activated, notes that you have written in the **Notes** window are saved in the template.

Attach Audio File Format

If this option is activated, whenever you use the **Render** function in the **Master Section**, the audio file configuration specified below is proposed by default.

Template Name

Allows you to enter a name for the template.

RELATED LINKS
Notes Window on page 252

Creating Files From Templates

You can create a file from a template to use its settings.

PROCEDURE

1. Select **File** > **New**.

2. Select the file type that you want to create.

3. Click **Templates**.

4. From the list of the available templates, select the template that you want to take as the basis of the new file.

Deleting Templates

PROCEDURE

1. Select **File** > **New**.

2. Select the file type for which you want to delete templates.

3. Click **Templates**.

4. Click **Explore**.

5. In the File Explorer/macOS Finder, delete the templates.

Renaming Templates

PROCEDURE

1. Select **File** > **New**.

2. Select the file type for which you want to rename templates.

3. Click **Templates**.

4. Click **Explore**.

5. In the File Explorer/macOS Finder, rename the templates.

Setting Templates as Default

You can set a template as the default template that opens when you click **New** on the command bar.

PROCEDURE

1. Select **File** > **New**.

2. Select the file type that you want to open.

3. Select **Templates**.

4. Right-click a template and select **Set as Default**.

RELATED LINKS
Command Bar on page 46

Defining Shortcuts for Templates

You can define key sequences and keywords for templates. This allows you to quickly open a template.

When you create templates from shortcuts, the option **Use Template Name as Default File Name** on the **Templates** tab is taken into account.

PROCEDURE

1. Select **File** > **New**.

2. Select the file type that you want to open.

3. Select **Templates**.

4. Right-click a template and select **Define Shortcut**.

5. In the **Shortcut Definitions** dialog, edit the shortcut for the selected template.

6. Click **OK**.

RELATED LINKS
Templates Tab on page 79

Work Folders vs. Document Folders

WaveLab Elements distinguishes between two types of folders: work folders and document folders.

- In work folders, temporary files are saved.

- Document folders contain WaveLab Elements-specific files, such as audio files, audio montages, etc.

RELATED LINKS
Folders Tab (Preferences) on page 83

Specifying Folders for Opening and Saving Files

You can specify which document folder should open when you perform an open or save operation. You can also specify up to three work folders for temporary files.

PROCEDURE

1. Open the file for which you want to specify folders.

2. Select **File** > **Preferences** > **Folders**.

3. On the **Folders** tab, click the type of folder for which you want to specify a location.

4. Specify a location in the **Folder** field.

5. Optional: Depending on the selected type of folder, you can make additional settings.

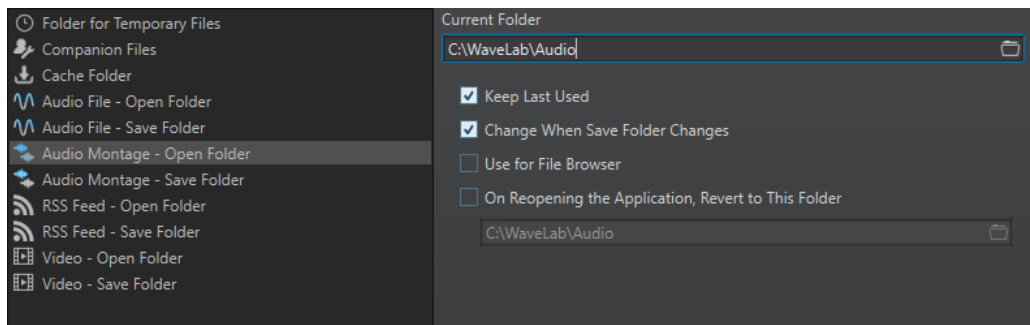RELATED LINKS
Folders Tab (Preferences) on page 83

Folders Tab (Preferences)

On this tab, you can specify default document folders and work folders for each file type.

- To open the **Folders** tab, select **File** > **Preferences** > **Folders**.

In the list on the left, you specify the folder type that you want to make settings for.

Folder for Temporary Files

Specify a folder for saving temporary files.

Companion Files

Specify a folder for saving companion files, that is, **Master Section** presets and view settings for audio files.

Cache Folder

Activate **Use Cache Folder for Decoded Files** to specify a cache folder. The cache folder contains wave files that are created when you are working with files in compressed file formats, such as MP3 files. To prevent the cache folder from growing indefinitely, WaveLab Elements checks the date of each file in this folder and deletes files that were created before a specific number of days. You can specify the number of days with the **Delete Files Older Than** option.

If **Use Cache Folder for Decoded Files** is deactivated, the compressed files are decoded each time they are opened.

Audio File – Open Folder/Save Folder

The default open and save folders for audio files.

Audio Montage – Open Folder/Save Folder

The default open and save folders for audio montage files.

Depending on the selected item, different settings are available on the right side of the dialog.

Current Folder

In this field, the folder that is used as default is displayed. You can click the folder button to the right to navigate to a folder, or to create a new folder.

Keep Last Used

Uses the last folder for saving or opening files of the selected type.

Change When Save Folder Changes/Change When Open Folder Changes

Updates the default open folder when you change the default save folder, and vice versa. Activate this option for both the save folder and the open folder if you want a specific file type to use the same folder for saving and for opening this type of file.

Use for File Browser

In the **File Browser**, the folder does not change when you switch between file types by default.

If you activate **Use for File Browser** and deactivate **Keep Last Used**, the folder location that you have selected in the **Current Folder** field of each file type is displayed when you switch between file types in the **File Browser**.

If you activate **Use for File Browser** and **Keep Last Used**, the folder that you have selected in the **Current Folder** field of each file type is displayed when you select a file

type for the first time. When you then browse to another folder in the **File Browser**, the **Keep Last Used** behavior is used. That is, the last used folder for this file type is displayed when you select the file type.

You can make these settings for each file type independently.

On Reopening the Application, Revert to This Folder

Activate this option to restore a specific folder each time you open WaveLab Elements. This way, any changes to save/open folders are only temporary and are reset when you restart WaveLab Elements.

Copying Audio Information to the Clipboard

You can copy information about the name and location of the selected audio file, including any selection information and cursor position. This information can be pasted into an external text application.

This is useful if you need accurate file path/selection information when writing a script, for example.

PROCEDURE

1. Click the **File** tab.

2. Click **Info**.

3. Click **Copy to Clipboard** and select the information that you want to copy to the clipboard.

Setting the Focus on the Current File

If you are editing inside a floating window or a tool window and you want to switch the focus back to a wave/montage window, you can use the **Set Focus on Current File** option.

PROCEDURE

● In any window, press **Ctrl/Cmd** - **F12**, to set the focus on the wave/montage window.

Playback

This chapter describes the methods for controlling playback and transport functions.

RELATED LINKS

Transport Bar

With this command bar you can control playback of an audio file or audio montage, navigate between various positions in an audio file or audio montage, and open the **Recording** dialog.

The transport bar is available in the **Audio Editor** and in the **Audio Montage** window.

By default, the extended transport bar options are hidden.

- To activate the extended transport bar, click **Extend Transport Bar** on the transport bar.

Presets

Allows you to save and apply presets.

Skip Range

If this button is activated, playback skips the selected range and any region within exclusion markers.

Perform Pre-Roll/Perform Post-Roll

Activates pre-roll or post-roll for the commands **Play from Anchor**, **Play until Anchor**, and **Play Audio Range**.

Right-click the button to select the pre-roll or post-roll length and to specify to which commands you want to apply pre-roll/post-roll to. To edit the pre-roll/post-roll times, select **Edit Pre-Roll and Post-Roll Times**.

Play Audio Range

Plays the selected audio range. Post-roll and pre-roll settings are taken into account. Right-click the button to open a menu with related options and auto selection modes.

- If **Auto Select Range** is activated, the range is automatically selected according to the editing actions.

- If **Play from Start of New Time Selection** is activated when you select a range with the mouse dragging from left to right and start playback, playback starts from the beginning of the selection. If you stop and start playback again or move the edit cursor, playback starts from the edit cursor position. If this option is deactivated, playback always starts from the edit cursor position.

  If **Play from Start of New Time Selection** and **Loop** are activated, playback restarts automatically when you select a new range.

- If **Auto Replay While Editing** is activated, playback is automatically restarted when you hold down the mouse button while editing ranges, and use the shortcuts to trigger playback. This is useful to find a loop, for example.

  This option works even if the automated selection mode is deactivated.

- If **Solo Track When Editing** is activated and you keep the mouse button pressed when editing ranges in the montage window, the track is soloed when you start playback using the shortcuts for **Play Audio Range**, **Play from Anchor**, or **Play until Anchor**. This option is only available in the **Audio Montage** window.

You can select different audio ranges for playback:

- **Time Selection**
- **Region between Marker Pairs**
- **Clip** (audio montage only)
- **Crossfade** (audio montage only)
- **Fade In** (audio montage only)
- **Fade Out** (audio montage only)

Play until Anchor/Play from Anchor

Plays until or from anchor. Pre-roll and post-roll settings are taken into account. Right-click the button to open a menu with related options and auto selection modes.

- If **Auto Select Anchor** is activated, the anchor is automatically selected according to the editing actions.
- If **Space Bar Triggers Play from Anchor** is activated and you press Space to start playback, the selected **Play from Anchor** setting is taken into account. If the selected anchor is not available, playback starts from the default playback position.
- If **Auto Replay While Editing** is activated, playback is automatically restarted when you hold down the mouse button while editing anchors, and use the shortcuts to trigger playback. This is useful to find a loop, for example.

  This option works even when the automated selection mode is deactivated.
- If **Solo Track When Editing** is activated and you keep the mouse button pressed when editing anchors in the montage window, the track is soloed when you start playback using the shortcuts for **Play Audio Range**, **Play from Anchor**, or **Play until Anchor**. This option is only available in the **Audio Montage** window.

You can select which anchor to use as reference for the commands **Play from Anchor** and **Play until Anchor**. When there are multiple possibilities, for example, multiple markers, the last selected item is used as a reference anchor or, if no item was selected, the closest item near the edit cursor position is used.

You can select one of the following anchors:

- **Edit Cursor**
- **Start of File**
- **Start of Selected Time Range**
- **End of Selected Time Range**
- **Any Marker**
- **Region Start Marker**
- **Region End Marker**
- **Clip Start** (audio montage only)
- **Clip End** (audio montage only)
- **Selected Envelope Point in Active Clip** (audio montage only)

When an anchor is detected, for example, a region marker pair, this is indicated by a green anchor marker.
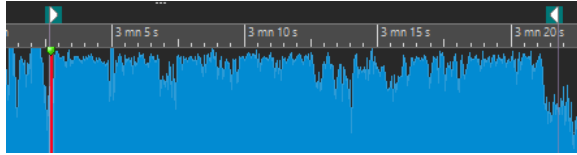
Move Cursor to Start of File/Move Cursor to End of File

Moves the edit cursor to the start/end of the file.

Move Playback Position Backwards/Move Playback Position Forwards

Moves the edit cursor position to the left/right. If you click during playback, playback jumps to the new edit cursor position.

To move the edit cursor to the start/end of the file, press **Ctrl/Cmd** , and click the **Move Playback Position Backwards/Move Playback Position Forwards** buttons.

Navigation anchors allow you to move the edit cursor to specific positions in the audio file or audio montage. Right-click the **Move Playback Position Backwards/Move Playback Position Forwards** buttons to open the **Navigation Anchors** pop-up menu. Here, you can set the type of navigation anchor. If you click during playback, playback continues from the anchor position.

Loop

Activates loop mode. Right-click the loop button to select whether to loop continuously or only a few times.

Stop Playback

Stops playback. If playback is already stopped, the edit cursor is moved to the previous start position. Right-click the button to open the **Move Cursor Back to Start Position** pop-up menu.

- If **After Standard Playback** is activated, the edit cursor jumps back to the start position when regular playback stops.

- If **After Automated Playback** is activated, the edit cursor jumps back to the start position when playback stops after **Play from Anchor**, **Play until Anchor**, or **Play Audio Range**.

Start Playback from Edit Cursor

Starts playing back the active audio file or audio montage from the edit cursor position.

If the audio being played back is not the active audio file, the **Play** button has a different color. This happens if you switch to another file window during playback, for example.

The playback button when playing back in the active window (left) and when playing in another window (right)

You can also start playback from the last stop position. Right-click the button to open the **Lead Sequence** pop-up menu.

- If you select **Start**, playback starts from the cursor position.

- If you select **Resume from Last Interruption**, playback starts from the last stop position.

Record

Opens the **Recording** dialog.

Time Display

Displays the edit cursor or playback position. Click to select another time unit.

Transport Bar in the RSS Feed Editor

In the **RSS Feed Editor**, a simplified transport bar allows you to play back the selected RSS feed episode.

Play Button

Clicking the **Play** button on the transport bar starts playing back the active audio file or audio montage from the edit cursor position.

You can also use `Space` or the `Enter` key on your keyboard to start playback. Pressing `Space` during playback stops playback, pressing `Enter` during playback makes playback restart from the last start position.

If the **Loop** button is activated, the audio selection is looped, if available. Otherwise, the region defined by loop markers is looped. If there are no selection ranges or loop markers, the entire file is looped.

The standard play command is not influenced by the **Play Audio Range**, **Play from Anchor**, and **Play until Anchor** options.

Stop Playback Button

The result of clicking the **Stop Playback** button on the transport bar or `0` on your numeric keypad depends on the current situation.

● If you trigger **Stop Playback** in stop mode, the edit cursor moves either to the previous playback start marker, or to the selection start (whatever is closer), until the start of the file is reached.

● If there is no selection or if the edit cursor is positioned to the left of the selection, it is moved to the beginning of the file instead.
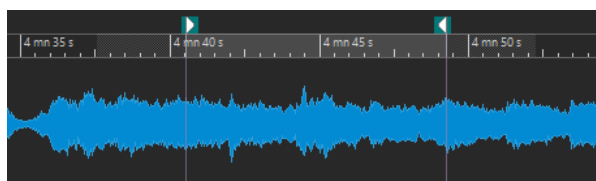
Playing Back Audio Ranges

You can play back audio ranges using the **Play Audio Range** options on the transport bar.

PROCEDURE

1. On the transport bar, right-click **Play Audio Range** and select the range type that you want to play back.

2. Optional: Activate **Perform Pre-Roll** and/or **Perform Post-Roll**.

3. Position the edit cursor inside the range that you want to play back or make a selection range.

   This selected range and, if activated, the pre-roll and post-roll times are displayed on the time ruler.

4. To play back the selected range, click **Play Audio Range** on the transport bar or press `F6`.

RESULT

The selected range is played back. Pre-roll and post-roll settings are taken into account. If the **Loop** mode is active, pre-roll is used before the first loop only, and post-roll is only used after the last loop.
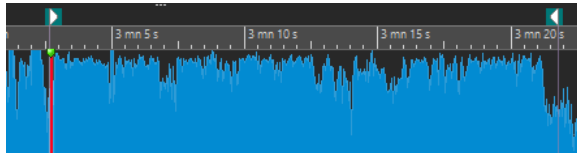
Playing Back from an Anchor or until an Anchor

You can play back audio from an anchor or until a specified anchor using the **Play from Anchor** or **Play until Anchor** options on the transport bar.

PROCEDURE

1. On the transport bar, right-click **Play from Anchor** or **Play until Anchor**, and select an anchor type.

2. Depending on the selected anchor type, position the edit cursor in the wave window or montage window inside the range that you want to play back.

    For example, if you have selected **Region Start Marker**, click somewhere in the area of the region marker pair from which you want to play back from/to. The green anchor marker jumps to the selected anchor.

3. Optional: Activate **Perform Pre-Roll** and/or **Perform Post-Roll**.

4. To play back from the anchor marker, click the **Play from Anchor** button on the transport bar or press `F7`. To play back until the anchor marker, click the **Play until Anchor** button on the transport bar or press `F8`.

RESULT

Playback starts from the anchor or stops at the anchor. Pre-roll and post-roll settings are taken into account.

"Play from Anchor" and "Play until Anchor" Functions

You can play back audio from an anchor or until an anchor using the **Play from Anchor** or **Play until Anchor** functions on the transport bar. These playback functions behave differently depending on the pre-roll and post-roll settings.

Play from Anchor

-   If post-roll is activated, playback starts at the anchor position and stops after the post-roll time. If no post-roll is selected, playback continues until the end of the audio file or audio montage.

-   If pre-roll is activated, playback starts from the selected anchor, minus the pre-roll time.

-   If pre-roll and post-roll are activated, playback starts from the selected anchor, minus the pre-roll time and stops after the anchor point plus the post roll time.

-   If the loop mode is activated, the pre-roll and post-roll settings are taken into account. This way you can play a loop around the edit cursor position, without having to make further range settings.

Play until Anchor

- Playback starts from the cursor, and stops at the selected anchor. If the cursor is beyond the selected anchor, playback starts at the selected anchor. If pre-roll is activated, it is taken into account.

- If pre-roll is activated, playback starts from the selected anchor minus the pre-roll time, until the selected anchor.

- If no anchor is selected, **Play until Anchor** is deactivated.

- The loop settings have no effect.

Using the Auto Selection Mode

You can use the auto selection mode in combination with the playback shortcuts to play back audio ranges or anchors. This makes it easy to monitor your editing actions.

PROCEDURE

1. On the transport bar, right-click the **Play from Anchor** or **Play until Anchor** button and activate **Auto Select Anchor**.

2. Right-click the **Play Audio Range** button and activate **Auto Select Range**.

3. In the wave window or the montage window, do one of the following:

   - Make a selection range.

   - Click inside the area of a marker pair.

   - Click a fade in, fade out, or crossfade.

   - Click anywhere in the wave/montage window.

   - Drag a marker.

   Depending on your action, the most appropriate range, or anchor, is selected. For example, if you click inside a marker pair, this region is selected as playback range.

   The time ruler shows the selected range or anchor.

   NOTE

   In **Auto Select Anchor** and **Auto Select Range** mode, you can still change some range and anchor options on the transport bar to play a different range/anchor. However, the range/anchor are reselected when you start editing again with the mouse.

4. Use the playback shortcuts to start playback.

   - To play back the selected audio range, press **F6**.

   - To play back from an anchor, press **F7**.

   - To play back until an anchor, press **F8**.

RESULT

The selection range is played back, or play back starts from the anchor or stops at the anchor. Pre-roll and post-roll settings are taken into account.

NOTE

A selection range has priority over any other range. To allow other ranges to be auto-selected, deselect the selection range.

Using Auto Replay While Editing

You can automatically re-trigger playback while editing audio with the mouse. This is useful if you want to monitor the adjustment of a selection boundary, for example.

PROCEDURE

1. On the transport bar, right-click the **Play from Anchor** or **Play until Anchor** button and activate **Auto Replay While Editing**.

2. In the wave window or the montage window, make a selection range and keep the mouse button pressed.

3. Start playback by using one of the following shortcuts:

   - To play back the selected audio range, press **F6**.
   - To play back from an anchor, press **F7**.
   - To play back until an anchor, press **F8**.

4. Drag the cursor to the right or left.

   The selection range is adjusted and played back until you release the mouse button. When playback ends, the new selection range is played back.

Skipping Sections During Playback

You can automatically skip a selected audio range during playback. This way, you can audition what the material would sound like without specific sections.

PROCEDURE

1. On the transport bar, activate **Skip Range**.

2. Activate **Perform Pre-Roll** and **Perform Post-Roll**.

3. If you want to use the **Play Audio Range** function, activate one of the **Ranges** modes.

4. Depending on the **Ranges** mode, do one of the following:

   - If you have activated **Time Selection**, make an audio selection in the wave window.
   - If you have activated **Region Between Marker Pairs**, click between a marker pair.

   The audio range that will be skipped is displayed on the time ruler along with the pre-roll and post-roll times.
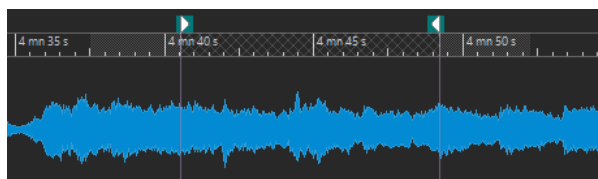
5. Select **Play Audio Range**, or press **F6**.

RESULT

The selected range is skipped during playback.

You can also use the factory preset for skipping selections during playback. Activate **Skip Range**, make an audio selection, and press **Shift**-**F6**.

> **NOTE**
>
> This mode also works with the **Start Playback from Edit Cursor** button if there is a time selection or if exclusion start and end markers are set. In this case, the pre-roll and post-roll times are ignored.

Loop Playback

You can loop the audio selection, if available. If there is no selection range, the entire file is looped.

Loop points are updated continuously during playback. If you change the loop start or end during playback, the loop changes. This way, you can audition selection points for rhythmic material.

If you loop a section in an audio montage, playback loops within the boundaries of the current selection range. This selection range may be on any track, even if it is empty. The vertical position of the selection range is of no relevance for loop playback, only the left and right selection boundaries matter.

RELATED LINKS
Loops on page 321

Pre-Roll and Post-Roll

You can start playback slightly before a specific position (pre-roll) and stop playback slightly after another position (post-roll). This gives you a brief context if you are auditioning a clip, for example.

The position can be an anchor or the start or end of a range. The pre-roll and post-roll times are displayed in the time ruler.
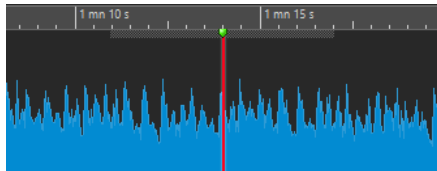
To activate pre-roll and/or post-roll, activate **Perform Post-Roll** and **Perform Pre-Roll** on the transport bar.

When right-clicking the pre-roll or post-roll button on the transport bar, you can select a pre-roll/post-roll time. Here, you can also select a play option for the pre-roll/post-roll, and you can open the **Pre-Roll and Post-Roll Times** dialog.
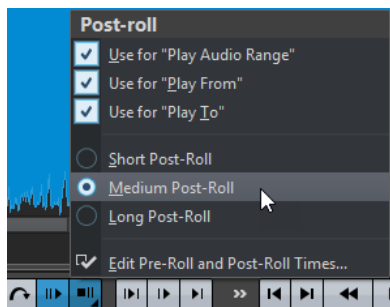
Pre-Roll and Post-Roll Times Dialog

This dialog allows you to define a short, an average, and a long pre-roll and post-roll time. These settings are global to WaveLab Elements.

● To open the **Pre-Roll and Post-Roll Times** dialog, right-click the pre-roll or post-roll button on the transport bar, and select **Edit Pre-Roll and Post-Roll Times**.
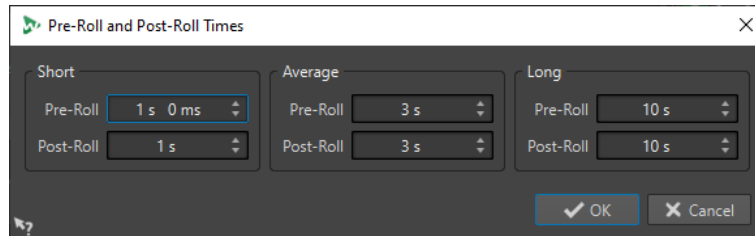
Playback Shortcuts

In addition to the buttons on the transport bar, there are shortcuts to control the playback.

Space

Starts/Stops playback. This shortcut can be used even when the wave window or montage window is not the active window.

0 on numeric keypad

Stops playback. If the playback is stopped and you press this shortcut, the edit cursor moves either to the previous playback start marker, or to the selection start (whatever is closer), until the start of the file is reached. This is the same as clicking **Stop Playback** on the transport bar. This shortcut can be used even if the wave window or montage window is not the active window.

Enter

Starts playback. If pressed during playback, playback restarts from the previous start position. This is the same as clicking **Start Playback from Edit Cursor** on the transport bar.

Alt-Space

Starts playback from the mouse cursor position.

F6

Starts playback of the selected range, depending on the selected option in the **Ranges** section of the transport bar.

F7

Starts playback from the selected anchor, depending on the selected option in the **Anchors** section of the transport bar.

F8

Starts playback until the selected anchor, depending on the selected option in the **Anchors** section of the transport bar.

Save Transport Bar Preset Dialog

In this dialog, you can save a transport bar setup as preset.

● To open the **Save Transport Bar Preset** dialog, click the **Presets** field on the transport bar, and select **Save As**.
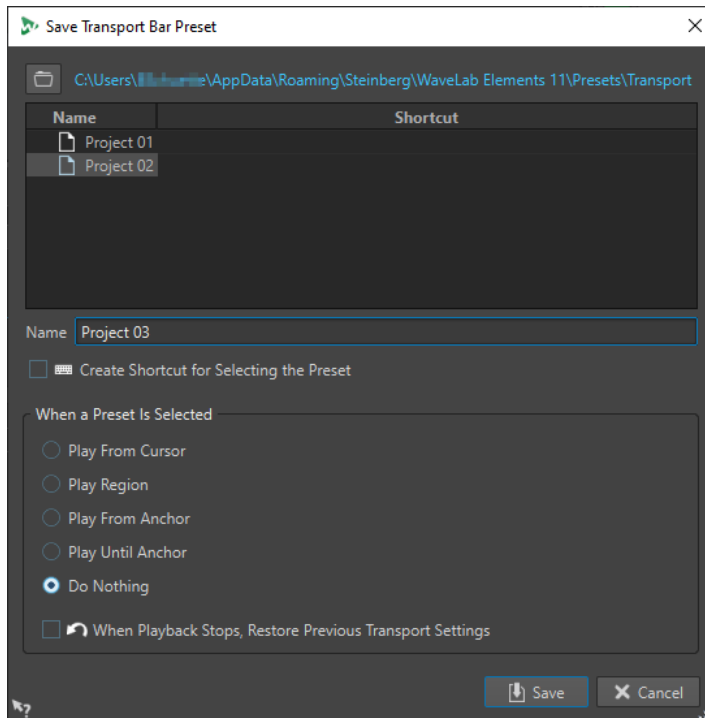
Path

Opens the root folder of the preset in the File Explorer/macOS Finder. Here, you can create subfolders for your presets.

Presets list

Lists all existing presets.

Name

Lets you specify a name for your preset.

When a Preset Is Selected

This lets you assign a customized playback command to a shortcut. For example, you can set a shortcut to play a range with a short pre-roll/post-roll, and another shortcut to play a range without a pre-roll/post-roll.

When Playback Stops, Restore Previous Transport Settings

If this option is activated, the settings are restored to as they were before playback start. This is useful to trigger a special play task, and automatically switch back to the standard settings as soon as playback is finished.

Changing the Position of the Transport Bar

You can position the transport bar at the top, middle, or bottom of the file window.

PROCEDURE

1. In the title bar of the **Audio Editor** or **Audio Montage** window, click **Layout Options**.

2. In the **Transport Bar** section, select whether to position the transport bar at the **Top**, **Middle**, or **Bottom**.

Hiding the Transport Bar

You can hide the **Transport Bar** to save screen space.

PROCEDURE

1. In the title bar of the **Audio Editor** or **Audio Montage** window, click **Layout Options**.

2. In the **Transport Bar** section, select **Hidden**.

Audio-Processing Load

The **Audio-Processing Load** display on the **Transport Bar** shows the average audio-processing load of plug-ins during playback. This allows you to monitor the number of plug-ins you can use.

The green bar displays the average audio-processing load of all active plug-ins. At 100 % load, dropouts are likely to happen. The red bar displays the load of the last processed audio.

● To activate/deactivate the **Audio-Processing Load** function, right-click the **Transport Bar** and click **Audio-Processing Load**.

Starting Playback From the Time Ruler

You can use the time ruler to jump to a position and start playback from there.

● Double-clicking the time ruler starts playback from that position. Playback continues until you click **Stop Playback** or until the end of the audio file or audio montage.

● To set the playback position to a specific position, click the time ruler during playback. This also applies for clicking the time rulers of another audio file or audio montage, which allows you to quickly switch playback between audio files or audio montages.

● To start playback from a marker position, press **Ctrl/Cmd** and double-click the marker.

RELATED LINKS
Time Ruler and Level Ruler on page 49

Playing Back Focused Audio Channels

During playback, you can switch between playing back the left/right, mid/side, channel clusters of multichannel audio files, or both audio channels.

PROCEDURE

1. In the **Audio Editor**, activate **Play Back Focused Audio Channels**.
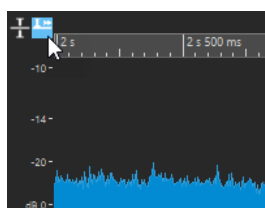
> **NOTE**
>
> If you are using the **Play Back Focused Audio Channels** option for multichannel audio files, the **Mute** and **Solo** buttons are not available.
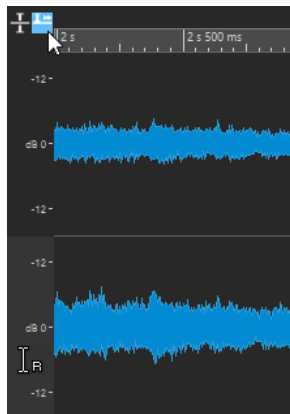
2. Start playback.

3. To switch playback between the different audio channels, do one of the following:

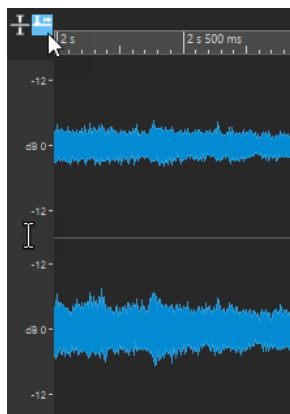   - To play back the left or mid audio channel, click the upper area of the level ruler.
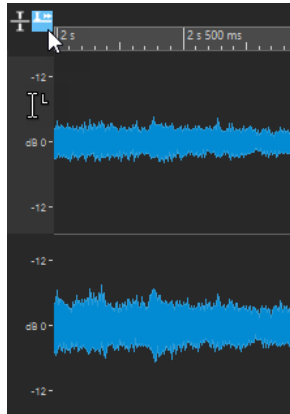
   Cursor position for playing back the left audio channel

   - To play back the right or side audio channel, click the lower area of the level ruler.

   Cursor position for playing back the right audio channel

   - To play back both audio channels, click the middle area of the level ruler.

   Cursor position for playing back the left and right audio channels

- To play back a channel cluster of a multichannel audio file, click the channel control area of the channel cluster.

- To circle through the audio channels via key commands, press **Tab** or **Tab** - **Shift** .

RELATED LINKS

Playing Back Multichannel Files

You can play back multichannel files according to your audio device setup. If your setup does not allow playing back all audio channels, you can play back the multichannel file in stereo.

PREREQUISITE

In the **Audio Connections** tab, specify the input and output buses and which device you want to use for audio playback.

PROCEDURE

1. Open a multichannel audio file in the **Audio Editor** or **Audio Montage**.

2. Start playback.

   If your audio device setup was set up correctly, the multichannel file is played back. If your audio device setup does not allow playing back all channels of the multichannel file, the **Incomplete Audio Device Connections** dialog opens.

3. In the **Incomplete Audio Device Connections** dialog, do one of the following:

   - To stop playback, click **Stop (No Playback)**.

   - To open the **Audio Connections** tab and make changes to your audio device setup, click **Open Audio Connections**.

   - To start playback but mute all channels that cannot be played back, click **Continue (Some Audio Channels Will Be Muted)**.

   - To play back the multichannel audio file in stereo, click **Activate the Master Section "Mix to Stereo" Option for Playback**.

     NOTE

     Consider using the plug-in **MixConvert V6** in the **Master Section** instead to mix the multichannel file to stereo.

RELATED LINKS

Playback Scrubbing

Playback scrubbing helps you find a specific position in an audio file by restarting playback repeatedly when you click and drag on the time ruler during playback or when using the **Play** tool.

RELATED LINKS

Scrubbing Using the Play Tool

The **Play** tool allows you to play back from any position on one or both stereo channels.

PROCEDURE

1. In the **Audio Editor**, select the **Edit** tab.

2. In the **Tools** section, select the **Play** tool, or press and hold Alt .

3. Click in the wave window.

4. In the wave window, click at the position where you want playback to start.

   The cursor shape indicates whether the left (L) or the right (R) channel is played back. Using the Play tool in the middle of the channels plays back both channels.

RESULT

Playback continues for as long as you keep the mouse button pressed, or until the audio file ends. After playback has stopped, the cursor is moved to the playback start position.

RELATED LINKS

Scrubbing Using the Time Ruler

During playback, you can click the time ruler to play back from the selected position.

PROCEDURE

1. Start playback.

2. Click the time ruler and hold the mouse button pressed, and drag left or right.

3. When you are done scrubbing, release the mouse button.

   The audio is played back from the edit cursor position and a small section is looped once.

RELATED LINKS

Playback Scrubbing Preferences

You can define the behavior of the **Play** tool in the **Audio Files Preferences**.

Select **File** > **Preferences** > **Audio Files**. The following options are available in the **Playback Scrubbing** section on the **Editing** tab:

- If **Restrict to Play Tool** is activated, scrubbing is not available when you click and drag on the time ruler during playback.
- The **Sensitivity** setting determines the length of the audio loop that is played once when click and drag on the time ruler with the **Play** tool.

RELATED LINKS

Timecode Window

This window can display the recorded time, the time offset in relation to various positions, and dynamic colors according to the context. During playback, the song position is displayed. If nothing is played back, the edit cursor position is displayed.

- To open the **Timecode** window, select **Meters** > **Timecode**.
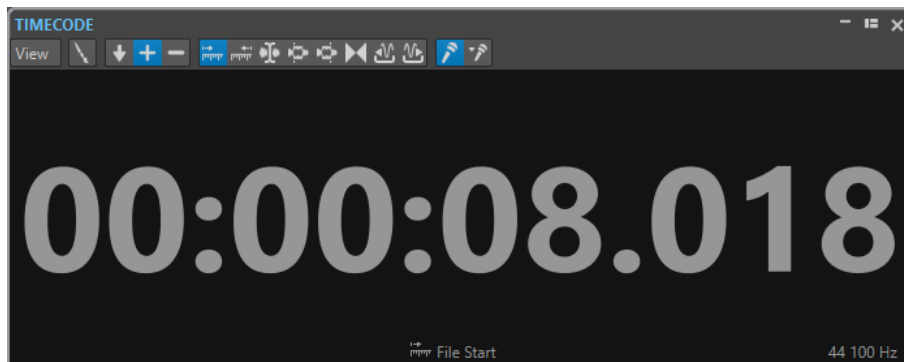
View Menu

Edit Colors

Opens the **Timecode Colors** dialog, where you can edit the colors of the **Timecode** window.
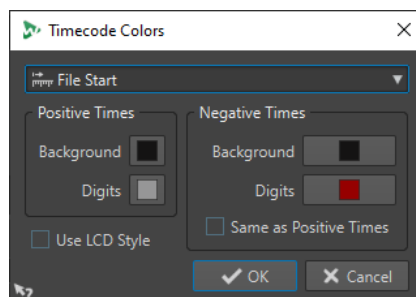
Reduced Precision

If this option is activated, the timecode display show fewer digits.

Positive Times

If this option is activated, positive values are displayed. If **Negative Times** is also activated, the closest offset, negative or positive, is displayed.

Negative Times

If this option is activated, negative values are displayed. If **Positive Times** is also activated, the closest offset, negative or positive, is displayed.

File Start/File End

Displays the position in relation to the start and end of the time ruler. The time format is displayed according to the ruler.

Offset Display

Lets you select from which position you want to display the offset. The following positions are available: edit cursor, selection start/end, marker, CD track start/end, clip start/end.

Recorded Time

If this option is activated, the **Timecode** window displays the recorded time when you start recording.

Recorded Time (from Last Marker)

If this option is activated, the **Timecode** window displays the recorded time since the last dropped marker when you start recording.

Scroll During Playback

You can determine how the view should be scrolled in **Play** mode.

- To set the scroll mode, open the **Audio Editor** or the **Audio Montage** window, select the **View** tab, and activate one of the options in the **Playback** section.

Static View

Disables scrolling.

View Follows Cursor

The view automatically scrolls to keep the playback cursor visible.

Scroll View

Scrolls the view to keep the playback cursor centered.

NOTE

If you get dropouts during playback, activate **Static View**.

Playback in the Audio Montage Window

Playback in the **Audio Montage** window works the same way as in the **Audio Editor**. However, there are some things to note.

Mute and Solo Tracks

You can mute or solo tracks in an audio montage by using the corresponding buttons in the track control area.

CHOICES

- In the track control area of a track, do one of the following:

    - To mute a track, click **Mute**.

      When a track is muted, the mute button is yellow.

    - To solo a track, click **Solo**.

      When a track is soloed, the solo button is red.

    - To solo multiple tracks, `Ctrl/Cmd`-click **Solo** for all tracks that you want to solo.

    - To activate solo defeat for a track, press `Ctrl/Cmd`-`Alt/Opt` and click **Solo**.

      In this mode, the track is not muted when you solo another track. To deactivate solo defeat, click **Solo** again.

RELATED LINKS
Track Control Area on page 178

Playing Back Individual Clips

You can play back an individual clip on a track. Overlapping clips or clips on other tracks are muted.

PROCEDURE

1. In the montage window, right-click the lower part of the clip that you want to play back.

2. On the menu, select one of the following play options:

    - To play back the clip, select **Play Clip**.
    - To play back the clip with pre-roll, select **Play Clip with Pre-Roll**.

Playing Back a Selection Range of a Track

You can select a section of a clip and play it back. Overlapping clips or clips on other tracks are muted.

PROCEDURE

1. In the montage window, make a selection range, either in a clip or in an empty section of a track.

2. Right-click the selection range, and select **Play Clip Inside Selection Range**.

Audio File Editing

Audio file editing refers to opening, editing, and saving audio files.

Wave Window

The wave window in the **Audio Editor** displays audio files graphically. Here, you view, play back, and edit individual audio files.
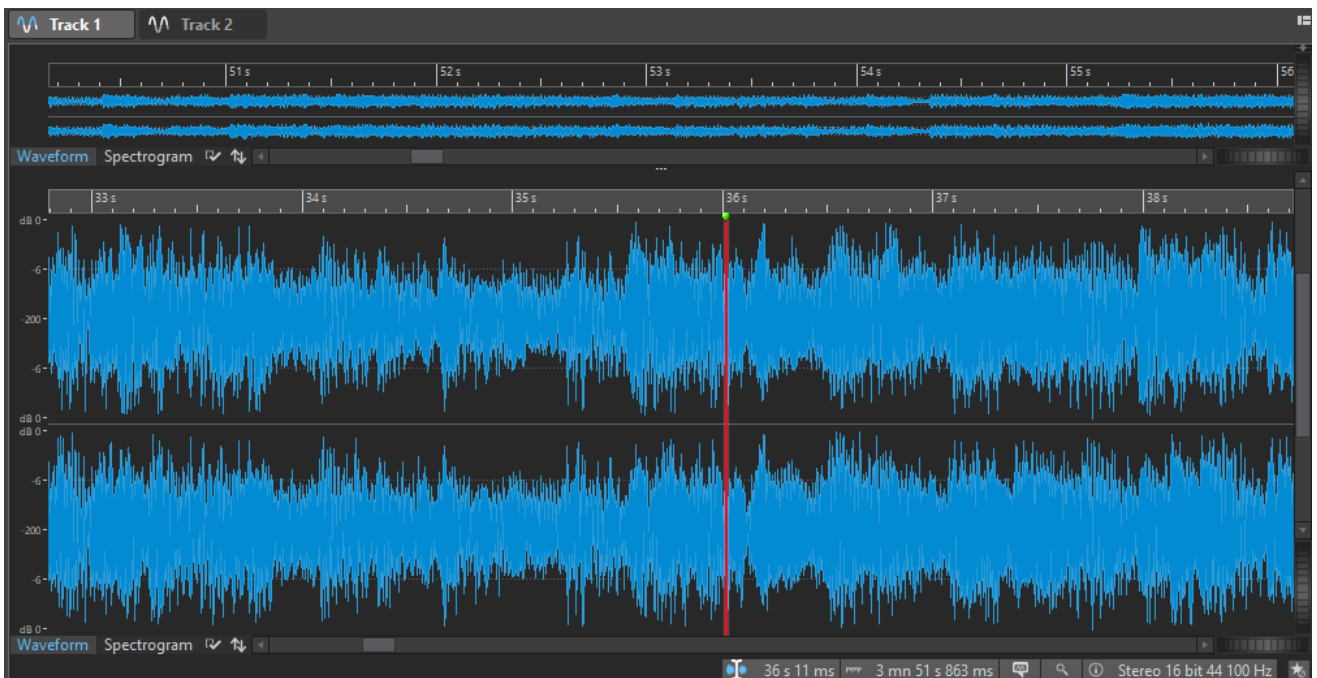
The wave window consists of two displays. You can use one display as an overview to navigate through the project and the other as the main view for editing.
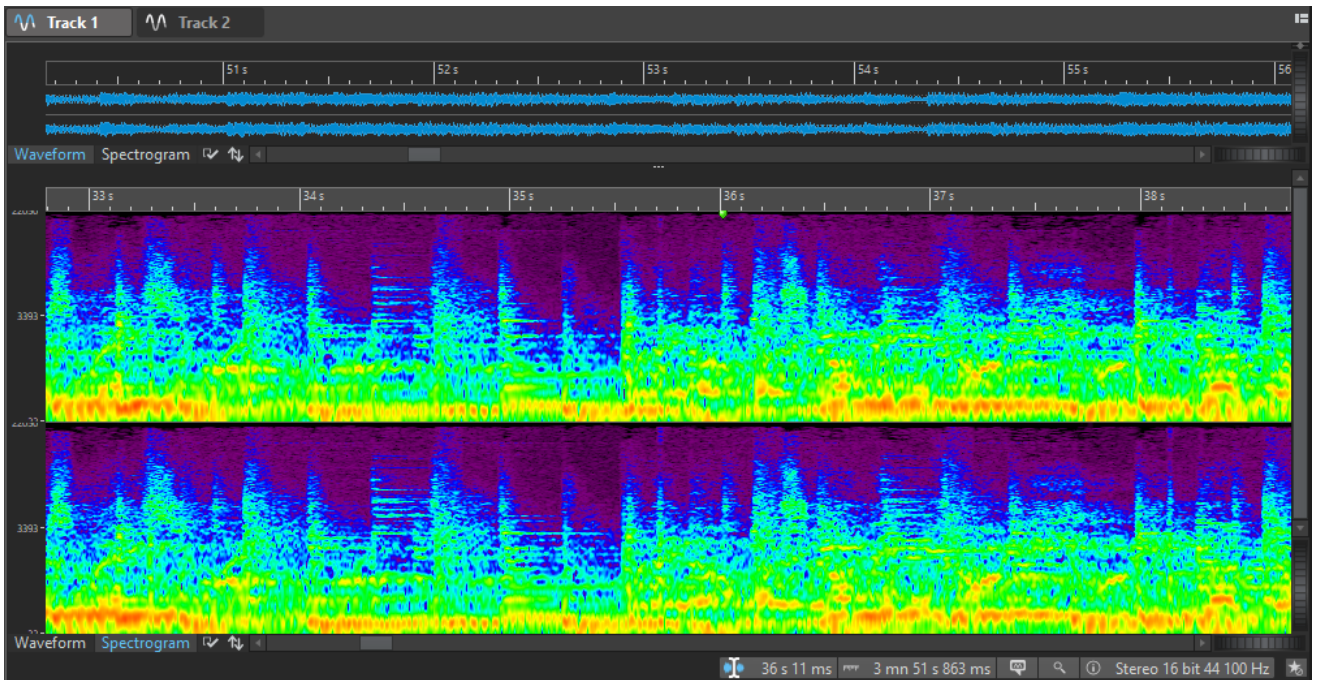
You can synchronize the waveform displays so that they display the same part of the audio file, by clicking **Sync with Other View**.
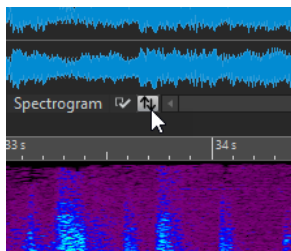
Spectrogram

The **Spectrogram** allows you to view the level intensity of each area in the frequency spectrum. You can use the WaveLab Elements editing tools to edit the spectrogram.

● To open the **Spectrogram** display, click **Spectrogram** at the bottom of the wave window.
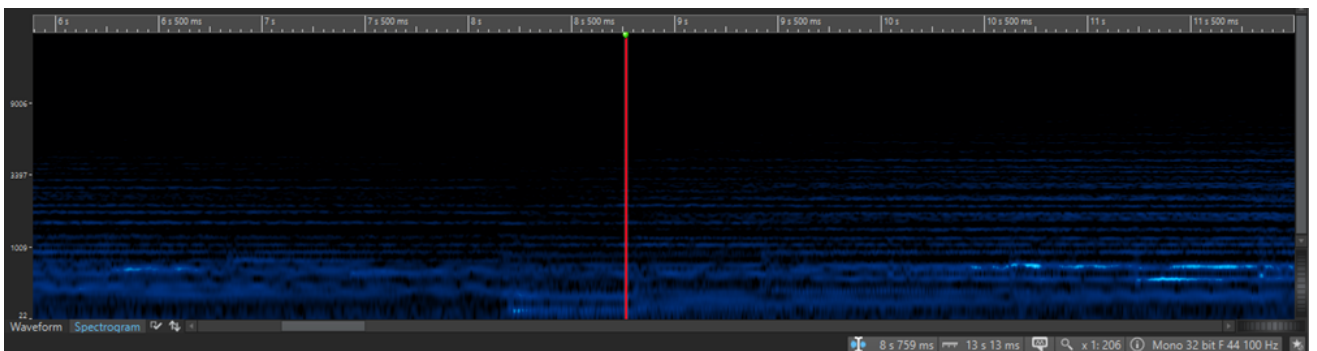
Channel Control Area

The channel control area is located on the left waveform in the wave window. The channel control area allows you to select channels, and mute and solo single channels of multichannel audio files
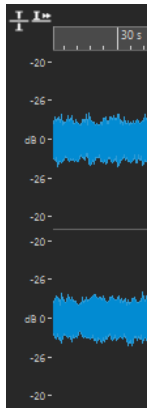
Channel control area of a stereo audio file
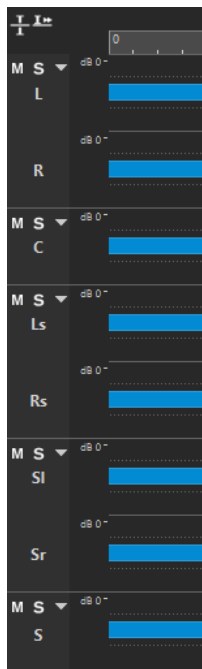
Channel control area for channel clusters of a multichannel audio file

Mute

Mutes the channel cluster. This only affects playback, not rendering.

Solo

Solos the channel cluster. This only affects playback, not rendering.

Fold/Unfold Channel Cluster

Allows you to fold and unfold individual channel clusters.

RELATED LINKS
Wave Window on page 103
Multichannel Audio Files on page 116

Magnetic Bounds in Audio Files

Some positions, such as markers or selection edges, can be defined as magnetic. Dragged elements can snap to these positions. This makes it easier to position items accurately.

For example, if you move a marker and it gets close to one of the magnetic bounds, the marker snaps to this position. A label is displayed, indicating the snap position.
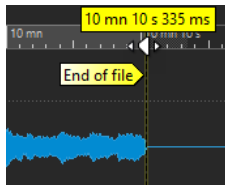
To place the cursor at a magnetic position, click the time line and keep the mouse button pressed. When you now move the cursor, it jumps to the next magnetic bound.

RELATED LINKS
Magnets Menu on page 106

Magnets Menu

On this pop-up menu, you can specify which positions should be magnetic. If **Snap to Magnets** is activated, items that you move snap to these positions.

● To open the **Magnets** pop-up menu, select the **Edit** tab in the **Audio Editor**, and click **Magnets** in the **Snapping** section.

You can let items snap to the following positions:

Start of File/End of File

Elements snap to the start/end of the file when they are moved near these positions.

Time Ruler Marks

Elements snap to the time ruler grid when they are moved near these positions.

Markers

Elements snap to marker positions when they are moved near these positions.

Selection Edges

Elements snap to the selection edges when they are moved near these positions.

Cursor

Elements snap to the edit cursor when they are moved near the cursor.

Zero Crossing

A zero crossing is a point where the waveform crosses the zero level axis. When you perform editing operations, such as cutting, pasting, or dragging, make sure that the material is inserted at a zero crossing.

If you do not perform these operations at zero crossings, this can result in discontinuities in the wave, which are perceived as clicks or pops in the sound.
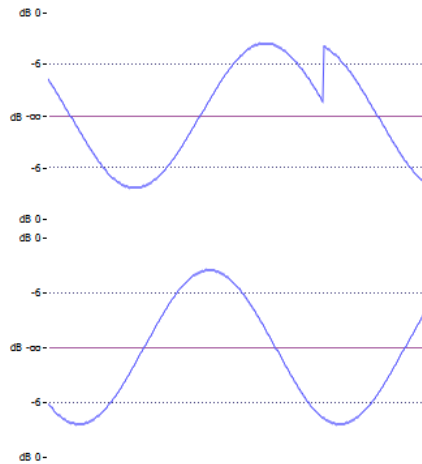
Activate **Zero-Crossing** on the **Edit** tab of the **Audio Editor** to make sure that the selections that you make are always adjusted so that they start and end at the nearest zero crossing.

Setting Up the Zero Crossing Detection

You can let selection edges automatically snap to the nearest zero crossing point. In the **Audio Files Preferences** dialog, you can specify whether to allow snap at high zoom factors, and specify the scan range for the zero crossing detection.

PROCEDURE

1. In the **Audio Editor**, select the **Edit** tab.

2. In the **Snapping** section, activate **Zero-Crossing**.

3. Select **File** > **Preferences** > **Audio Files**.

4. In the **Audio Files Preferences** tab, select the **Editing** tab.

5. Make your settings in the **Snap Selection to Zero-Crossing** section.

RELATED LINKS
Audio Files Preferences on page 384

Moving the Cursor Position to the Closest Zero Crossing

You can automatically move the cursor position to the closest zero crossing.

PROCEDURE

1. In the **Audio Editor**, select the **View** tab.

2. In the **Cursor** section, click **Snap to Zero-Crossing**.

Audio Editor Tabs

The tabs in the **Audio Editor** give you access to the tools and options you need to edit audio files.

RELATED LINKS
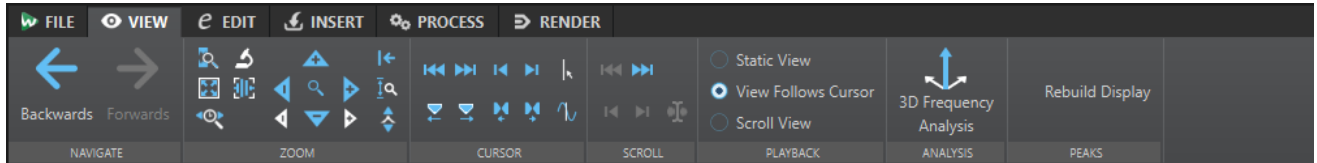View Tab (Audio Editor) on page 108
Edit Tab (Audio Editor) on page 110
Insert Tab (Audio Editor) on page 113

View Tab (Audio Editor)

● In the **Audio Editor**, click **View**.

Navigate

Backwards/Forwards

Navigates to the previous/next cursor position, zoom factor, and selection range.

Zoom

Time

Opens a pop-up menu that allows you to adjust the zoom to display the selected time range. **Zoom in 1:1** zooms in so that one pixel on the screen represents one sample.

To edit the zoom factor, click **Edit Zoom Factor**. This opens the **Zoom Factor** dialog, where you can edit the following settings:

● **Set Time Range** allows you to specify the time range that you want to display.

● **Samples per Screen Point** allows you to specify how many audio samples are summarized in each screen point.

● **Screen Points per Sample** allows you to specify how many screen points are used to represent a single audio sample.

Zoom

Activates the **Zoom** tool that allows you to define a time range that is zoomed in.

Zoom Selection

Zooms the window so that the current selection occupies the entire montage window.

Microscope

Zooms in as far as possible.

Zoom in Audio (10x)/Zoom out Audio (10x)

Zooms in/out in big steps.

View All

Zooms out as far as possible.

Zoom in Audio/Zoom out Audio

Zooms in/out in small steps.

Level

Adjusts the zoom to only display samples below the selected dB value.

Optimize Vertical Zoom

Changes the vertical zoom factor so that the peaks are clearly visible. This adjustment is done according to the section of the wave that is visible in the wave/montage window.

Reset Zoom to 0 dB

Adjusts the zoom to display audio levels up to 0 dB.

Zoom in Vertically/Zoom out Vertically

Zooms in/out to show waveforms with a lower/higher level.

Cursor

Move Cursor to Start of File/Move Cursor to End of File

Moves the cursor to the start/end of the file.

Previous Marker/Next Marker

Moves the cursor to the previous/next marker.

Start of Selection/End of Selection

Moves the cursor to the start/end of the selected time range.

Previous Region Edge/Next Region Edge

Moves the cursor to the previous/next region edge.

Snap to Zero-Crossing

Moves the cursor to the nearest zero-crossing point.

Edit Cursor Position

Opens the **Cursor Position** dialog where you can edit the cursor position.

Scroll

Start/End

Displays the start/end of the audio without moving the cursor.

Start of Selection/End of Selection

Displays the start/end of the audio selection without moving the cursor.

Cursor

Displays the cursor position.

Playback

Static View

Deactivates scrolling.

View Follows Cursor

Automatically scrolls the view to keep the playback cursor visible.

Scroll View

Automatically scrolls the view to keep the playback cursor centered.

Analysis

3D Frequency Analysis

Opens the **3D Frequency Analysis** dialog where you can define which frequency range is analyzed and modify the appearance of the graph for the 3D frequency analysis.
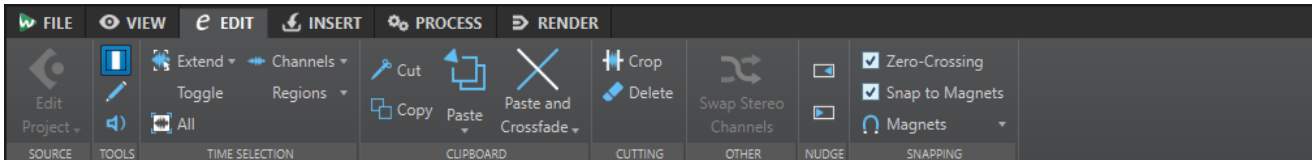
Peaks

Rebuild Peak Display

> Normally, peak files are automatically updated when the date of the peak file is older than the date of the audio file. However, it can happen that the date of the audio file is wrong and therefore not automatically updated. This option allows you to force a rebuild of the peak file.

Edit Tab (Audio Editor)

- In the **Audio Editor**, click **Edit**.

Source

Edit Project

> When you are working on an audio file or clip in WaveLab Elements, you can open the project of the audio file in Cubase/Nuendo. This allows you to correct issues that you have identified during mixing and correct these issues in the audio file in Cubase/Nuendo.
>
> **Edit Project** opens the corresponding sequencer project of the audio file.

Tools

Time Selection

> Tool that allows you to select a time range.

Pen

> Tool that allows you to redraw the waveform in the wave window. This can be used to quickly repair waveform errors.

Play

> Tool that allows you to play back the audio file at the position where you click.

Time Selection

Extend

> Opens a menu where you can select the following options for creating or extending selection ranges:
>
> - **Extend to Start of File** extends the selection to the start of the audio file. If there is no selection, a selection is created from the edit cursor position.
>
> - **Extend to End of File** extends the selection to the end of the audio file. If there is no selection, a selection is created from the edit cursor position.
>
> - **Extend to Previous Marker** extends the left edge of the selection to the nearest marker to the left or the start of the audio file. If there is no selection, a selection is extended until the previous marker position.
>
> - **Extend to Next Marker** extends the right edge of the selection to the nearest marker to the right or the end of the audio file. If there is no selection, a selection is extended until the next marker position.

- **Extend to Cursor** extends the selection to the edit cursor position.
- **From Start of File Until Cursor** selects the range between the start of the audio file and the edit cursor position.
- **From Cursor to End of File** selects the range between the edit cursor position and the end of the audio file.
- **From Cursor to Previous Marker** selects the range between the edit cursor position and the previous marker or the start of the audio file.
- **From Cursor to Next Marker** selects the range between the edit cursor position and the next marker or the end of the audio file.
- **Shift Selection to the Left** moves the selection by its length to the left.
- **Shift Selection to the Right** moves the selection by its length to the right.
- **From Playback Position to End** creates a selection range from the playback position to the end of the selection or to the end of the file if there is no selection. If playback is not active, the position of the edit cursor is used.
- **From Start to Playback Position** creates a selection range from the playback position to the start of the selection or to the start of the file if there is no selection. If playback is not active, the position of the edit cursor is used.
- **Double Selection Length** doubles the length of the current selection range.
- **Halve Selection Length** halves the length of the current selection range.

Toggle

Toggles the current audio selection.

All

Selects the entire waveform.

Channels

This pop-up menu allows you to change the channel selection.

- **Extend to All Channels** extends the current selection range to all channels.
- **Left Channel Only** reduces the current selection range to the left channel only.
- **Right Channel Only** reduces the current selection range to the right channel only.

Regions

This pop-up menu allows you to select a range between two markers.

- **Loop Region** selects the range between the two loop markers that encompass the edit cursor.
- **Generic Region** selects the range between the two generic markers that encompass the edit cursor.

Clipboard

Cut

Cuts the selected audio range to the clipboard.

Copy

Copies the active clip or the selected audio range to the clipboard.

Paste

Pastes the clipboard content.

Right-click **Paste** to open a pop-up menu that allows you to select a paste type.

- **Overwrite** replaces the audio at the cursor position.

- **Append** adds the pasted audio after the end of the file.
- **Prepend** adds the pasted audio before the beginning of the file.
- **Multiple Copies** opens a dialog in which you can enter the number of copies that you want to create.
- **Mix** blends two files into each other, starting at the selection or, if there is no selection, at the cursor position.

    If you select **Mix**, a dialog opens, allowing you to specify the gain and phase for the audio on the clipboard and at the destination. The clipboard data is always mixed in, regardless of the length of the selection.

Paste and Crossfade

Pastes the clipboard content and creates a crossfade.

Right-click **Paste and Crossfade** to open a pop-up menu that allows you to select a crossfade type for pasting.

- **Linear (Equal Gain)** changes the level linearly.
- **Sinus (Equal Power)** changes the level according to a sine curve, the power of the mix remains constant.
- **Square-Root (Equal Power)** changes the level according to a square-root curve, the power of the mix remains constant.

Cutting

Crop

Deletes the data outside the selection.

Delete

Deletes the selection. The audio to the right of the selection is moved to the left to fill the gap.

Other

Swap Stereo Channels

Moves the audio in the left channel to the right channel, and vice versa.

Nudge

Nudge Left

Nudges the audio selection to the left.

Nudge Right

Nudges the audio selection to the right.

Snapping

Zero-Crossing

If this option is activated, the start and the end of a selected range always snap to a zero-crossing point of the waveform.

If **Zero-Crossing** is activated and you add markers during playback via key commands, the markers snap to the nearest zero-crossing point of the waveform.

This applies for the following markers types:

- Generic markers
- Region markers

- Loop markers

Snap to Magnets

If this option is activated, moved elements such as clip edges, time selection edges, cursor, and markers snap to the magnets that are activated on the **Magnets** pop-up menu.

Magnets

This pop-up menu allows you to select which items should be magnetic.

Insert Tab (Audio Editor)

The **Insert** tab allows you to add markers, audio files, and signals to your audio file.

- In the **Audio Editor**, click **Insert**.

Markers

Marker Name

Allows you to enter the name of the start marker. If nothing is entered, a generic name is used.

To edit the default names, open the **Markers** window, and select **Functions** > **Default Marker Names**.

Different Name for End Marker

If this option is activated, you can enter a different name for the end marker in the **End Marker Name** field.

If this option is deactivated, the name of the start marker is also used for the end marker.

Create/Name Marker

The **Create/Name Marker** button in the lower right corner of the **Markers** section opens the **Create Marker** dialog. This allows you to create markers and marker pairs at the edit cursor position.

Audio File

At Start

Allows you to insert an audio file at the start of the active audio file.

At End

Allows you to insert an audio file at the end of the active audio file.

At Cursor

Allows you to insert an audio file at the cursor position.

Signal

Mute Selection

Replaces the audio selection with silence.

Silence Generator

Opens the **Silence Generator** dialog that allows you to insert silence or ambience sound in an audio file.

Bleep Censor

Opens the **Bleep Censor** dialog that allows you to replace a part in an audio file with a tone to cover a swear word, for example.

RELATED LINKS
Silence Generator Dialog on page 145
Bleep Censor Dialog on page 148

Process Tab (Audio Editor)

The **Process** tab provides access to the offline processing tools.

RELATED LINKS
Offline Processing on page 161

Render Tab (Audio Editor)

The **Render** tab allows you to mix down audio files.

● In the **Audio Editor**, click **Render**.
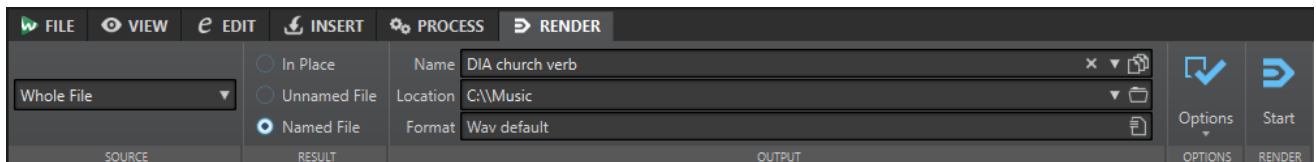
Source

The **Source** pop-up menu allows you to select which part of the audio file you want to process. The following options are available:

Whole File

Processes and renders the whole audio range.

Specific Marked Region

Processes and renders a specific audio range to an independent file.

Specify the region to process on the pop-up menu.

Result

In Place

If this option is activated, the rendered audio range replaces the source audio range.

Unnamed File

> If this option is activated, a temporary untitled file is rendered.

Named File

> If this option is activated, you can specify a name for the rendered file.

Output

Name

> Allows you to enter a name for the rendered file. Clicking the arrow icon opens a pop-up menu that offers you several naming options.

Location

> Allows you to select a destination folder for the rendered files.

Format

> Opens a pop-up menu where you can select a file format.

Options

Depending on the selected source, different options are available.

Bypass Master Section

> If this option is activated, the plug-ins and gain of the **Master Section** are bypassed when rendering.

Auto Save Master Section Preset

> If this option is activated, the **Master Section** preset is automatically saved in the companion file of the audio file when you render the file. You can load the **Master Section** preset via the **Load Master Section Preset** option in the lower right corner of the wave window.

Add Reverb Tail

> If this option is activated, the audio tail that is produced by effects such as reverb is included in the rendered file.

> Some plug-ins do not transfer information on the tail duration to WaveLab Elements. In this case, this option has no effect. For such plug-ins, you can add the **Silence** plug-in to add extra samples at the end of the file.

Copy Markers

> If this option is activated, the markers that are included in the range to process are copied to the rendered file.

Skip Exclusion Regions

> If this option is activated, muted audio ranges are skipped and not included in the result.

Open Resulting Audio File

> If this option is activated, every rendered file is opened in a new window.

Bypass Master Section on Resulting Audio File

> If this option is activated, playback of the resulting audio file bypasses the entire **Master Section**. This setting can be toggled by clicking the button at the bottom right of the wave window or montage window.

NOTE

It is recommended to activate this option, because this way, you do not monitor new files through the effects that have already been applied to them.

Render

Start

Starts the rendering process.

RELATED LINKS

File Handling in the Audio Editor

This section describes the principal editing operations within the **Audio Editor**.

Mono/Stereo Handling

WaveLab Elements is very flexible in its handling of stereo. All editing operations can be performed on either one channel or on both.

Multichannel Audio Files

A multichannel audio file is a set of audio channels. These channels are organized in channel clusters. A channel cluster is a logical group of channels. It is always one channel or a channel pair.

EXAMPLE

- Front left/right is a stereo channel cluster
- Back left/right is a stereo channel cluster
- Center is a mono channel cluster
- LFE is a mono channel cluster

You can edit multichannel audio files and its channel clusters the same way you edit stereo and mono audio files in WaveLab Elements.

Supported Multichannel File Formats

WaveLab Elements supports Wave multichannel files up to a 5.1 channel layout.

Available Multichannel Layouts

The following multichannel layouts from 3 channels up to 6 channels are available:
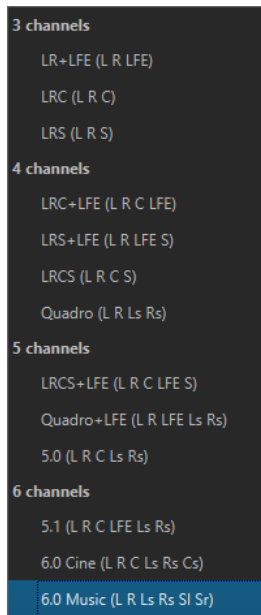
Multichannel Audio Editor

Multichannel audio files are displayed as channel clusters in the **Audio Editor**. Each channel cluster has a channel control area that allows you to mute, solo, and fold/unfold channel clusters.
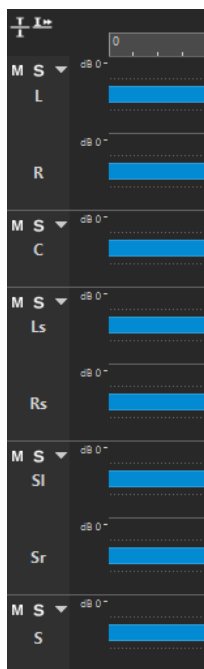
Channel control area

RELATED LINKS
Editing Multichannel Audio Files on page 118
Supported File Formats on page 120
Channel Control Area on page 105

Editing Multichannel Audio Files

You can use the WaveLab Elements tools to edit multichannel audio files.

You can make selections on one or multiple channels of a multichannel audio file, and copy and paste the selection.

You can edit one or multiple channels of a multichannel audio file with external editors. For example, you can select 4 channels and edit them in SpectraLayers.

The offline processing tools of WaveLab Elements are compatible with multichannel audio files.

RELATED LINKS
Supported File Formats on page 120
Selecting Channels in Audio Files on page 30
Copying Audio Using Copy and Paste on page 140
Master Section Tools on page 267
Offline Processing on page 161

Processing Individual Channel Clusters via the Master Section

You can select individual channel clusters of multichannel audio files to play them back or render them through the **Master Section**.

PROCEDURE

1. To select a channel cluster, do one of the following.

    ● In the **Master Section**, click **Channel Selector** and select a single channel cluster or all **All Channels**.
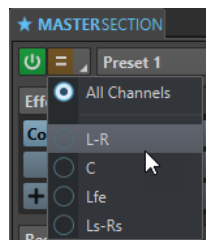
    ● In the channel control area, double-click a channel cluster. To select all channel clusters, double-click the channel control area again.
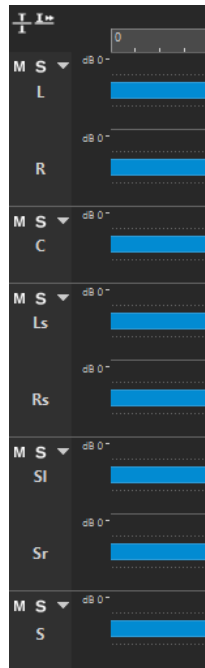
The selected channel cluster is displayed in the **Channel Selector** menu in the **Master Section**.

2. In the **Master Section**, make your settings and do one of the following:

    ● To play back the channel cluster via the front left/right audio ports or the mono audio port, start playback.

      You can set up the audio ports in the **Audio Connections** tab.

    ● To render the selected channel cluster, right-click **Render** and select **Render in Place**.

RELATED LINKS
Selecting Channels in Audio Files on page 30
Master Section Tools on page 267
Offline Processing on page 161
Audio Connections Tab on page 16

Muting and Soloing Channel Clusters

You can mute and solo each channel cluster of a multichannel audio file individually.

CHOICES

● In the channel control area, do one of the following:

    ● To mute a channel cluster, click **Mute**.
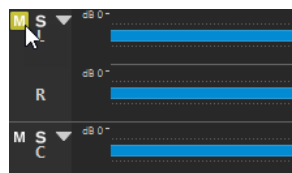
    ● To solo a channel cluster, click **Solo**.
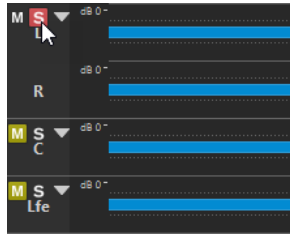
- To solo multiple channel clusters, **Ctrl/Cmd** -click **Solo** for all channel clusters that you want to solo.

- To activate solo defeat for a channel cluster, press **Ctrl/Cmd** - **Alt/Opt** and click **Solo**.

  In this mode, the channel cluster is not muted when you solo another cluster. To deactivate solo defeat, click **Solo** again.

RELATED LINKS
Multichannel Audio Files on page 116
Channel Control Area on page 105

Folding and Unfolding Channel Clusters

You can fold and unfold each channel cluster of a multichannel audio file individually.

CHOICES

- In the channel control area, do one of the following:

  - To fold a channel cluster, click **Fold/Unfold Channel Cluster**.
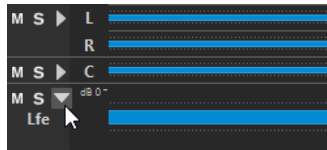
  - To unfold a channel cluster, click **Fold/Unfold Channel Cluster**.

  - To fold all channel clusters except one, **Ctrl/Cmd** -click **Fold/Unfold Channel Cluster** for the channel cluster that you want to keep unfolded.

  - To unfold all channel clusters, **Shift** -click **Fold/Unfold Channel Cluster** for any channel cluster.

RELATED LINKS
Multichannel Audio Files on page 116
Channel Control Area on page 105

Supported File Formats

WaveLab Elements can open and save audio files in a number of file formats.

AAC/MPEG-4 (.m4a, mp4)

Advanced Audio Coding (AAC) is a codec that allows lossy compression and encoding scheme for digital audio.

ADPCM – Microsoft/Dialogic (.vox)

This is a format commonly used for games and telephony applications. It offers a lower bit rate than linear PCM and therefore requires less storage space/bandwidth.

AIFF (.aif, .aiff, .snd)

Audio Interchange File Format, a standard defined by Apple Computers Inc. The following bit depths are supported: 8 bit, 16 bit, 20 bit, and 24 bit.

A-LAW (.alaw, .vox)

This is an audio encoding and compression technique for telephony, using 8-bit precision. The EU telephone system uses A-law encoding for digitization.

Ambisonics (.amb/.ambix)

WaveLab Elements can open and write Ambisonics files (first order, 4 channels).

Ensoniq Paris (.paf)

Used by the Ensoniq Paris™ system. The following bit depths are supported: 16 bit and 24 bit.

FLAC (.flac)

Free Lossless Audio Codec (FLAC) is a codec which allows digital audio to be losslessly compressed.

MPEG-1 Layer 2 (.mp2, .mpa, .mpg, .mus)

MP2 (sometimes referred to as "Musicam files") is a common file format in the broadcast industry.

MPEG-1 Layer 3 (.mp3)

The most common audio compression format. The major advantage of MPEG compression is that the file size is significantly reduced, while there is little degradation of sound quality.

NOTE

When you open an MPEG compressed file in WaveLab Elements, the file is converted to a temporary wave file. On saving, the temporary wave file is converted back to MP3.

Ogg Vorbis (.ogg)

Ogg Vorbis is a compressed file format that is open, patent-free, and which creates very small audio files maintaining comparatively high audio quality.

Sound Designer II (.sd2)

This audio file format is used by Digidesign applications (such as Pro Tools). The following bit depths are supported: 8 bit, 16 bit, and 24 bit.

Sun/Java (.snd, .au)

This is an audio file format used on Sun and NeXT computers. The following bit depths are supported: 8 bit, 16 bit, and 24 bit.

Text/Excel (.txt)

This is a text representation of a waveform. By saving an audio file as a text file and then opening it in a spreadsheet application such as Excel, you can view it in textual, decimal form, and edit the sample values. When you open a text file representing a waveform in WaveLab Elements, it is decoded and opened as an audio file. These files are not compressed in any way, so they can become very large.

When using 64-bit float files, the .txt format is not 100% lossless. This is because it is not possible to express a binary floating point value in textual decimal form without some precision loss.

U-LAW (.ulaw, .vox)

This is an audio encoding and compression technique supported by Windows and Web phones, using 8 bit precision. The U.S. telephone system uses U-law encoding for digitization.

Wave (.wav)

The following bit depths are supported: 8 bit, 16 bit, 20 bit, 24 bit, 32 bit, 32 bit float, and 64 bit float.

WaveLab Elements supports Wave multichannel files up to a 5.1 channel layout.

WavPack (.wv/.wvc)

This file format allows digital audio to be losslessly compressed, including 32 bit float audio files.

Windows Media Audio (.wma, .asf)

Microsoft's own compressed format. WaveLab Elements lets you import/export audio in this format (Windows only). To import/export audio in WMA surround format, Windows Media Player 9 or later must be installed on your system.

RF64

In the **Audio Files Preferences**, on the **File** tab, you can activate the RF64 file format support. If this is activated, the standard Wave file format switches automatically to the RF64 file format as soon as the file size exceeds 2 GB, without any performance loss or interruption. This is useful when recording very long sessions. A RF64 file has the extension **.**wav, but it can only be opened with an application that supports the RF64 standard if the file exceeds 2 GB.

Original Sound Quality (.osq, read-only)

This is the proprietary lossless compressed audio format of WaveLab.

RELATED LINKS
Windows Media Audio Encoding Dialog on page 132
Ogg Vorbis Dialog on page 131
FLAC Encoding Dialog on page 131
MP3 Encoding Dialog on page 127
MPEG-1 Layer 2 Encoding Dialog on page 130
AAC Encoding Dialog on page 129
20-bit, 24-bit, and 32-bit Float Files on page 122

20-bit, 24-bit, and 32-bit Float Files

You do not need a 20-bit or 24-bit audio card to take advantage of the fact that WaveLab Elements can handle 20-bit and 24-bit audio files. Any processing or editing performed on the files is always done at full precision (64-bit float), even if your card does not support the full precision.

For playback, WaveLab Elements automatically adapts to the card that you have installed.

Creating New Audio Files

You can create an empty audio file, to assemble material from other audio files, for example.

PROCEDURE

1. Select **File** > **New**.

2. Select **Audio File** > **Custom**.

3. Specify the audio properties and click **Create**.
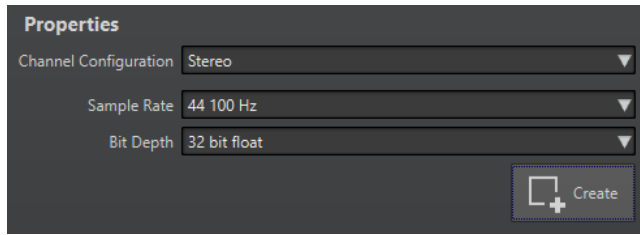
RELATED LINKS

Audio Properties Dialog

You can define the channel configuration, the sample rate, and the bit depth of the audio file.

You can set these properties when you create a new audio file.

● To change the properties for the selected audio file, select the **File** tab and click **Info**, or click the **Audio Properties** button at the bottom right of the wave window.
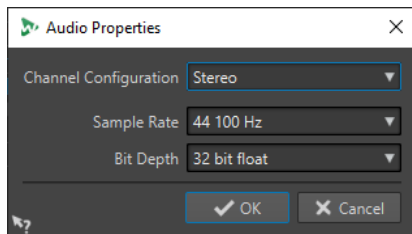
Channel Configuration

Allows you to select the number of audio channels.

Sample Rate

Allows you to select the number of audio samples per second.

Bit Depth

Allows you to select the accuracy of samples in the audio stream.

RELATED LINKS

Saving an Audio File

PROCEDURE

1. Do one of the following:

● To save an audio file that has never been saved before, select **File** > **Save As**.

● To save an audio file that has been saved before, click the **Save** button, or select **File** > **Save**.

2. In the **Save As** window, specify a file name and location.

3. Click **Save**.

RESULT

You can use undo/redo even after saving.

Saving in Another Format

You can change the file format, sampling frequency, bit depth, and stereo/mono status when saving.

PROCEDURE

1. Select **File** > **Save As**.

2. In the **Save As** window, specify a file name and location.

3. Click in the **Format** field and select **Edit**.

4. In the **Audio File Format** dialog, set the file format and specify the properties.

5. Click **OK**.

6. Click **Save**.

RESULT

A new file is created. The original file is not affected by the operation.

RELATED LINKS

Audio File Format Dialog

In this dialog, you can change various file settings when saving.

- To open the **Audio File Format** dialog, select **File** > **Export**, and select **Render**. Then activate **Named File**, click in the **Format** field, and select **Edit**.

This dialog can also be opened from various other locations in WaveLab Elements.
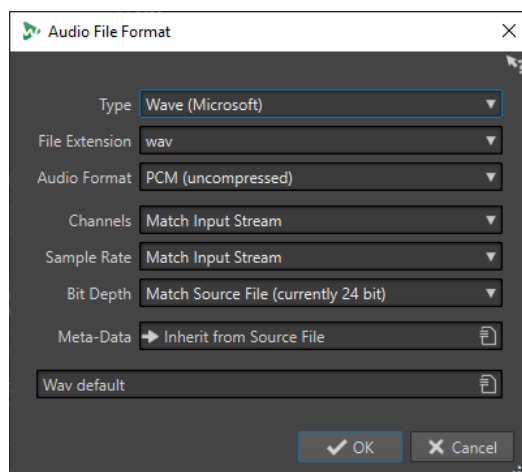
Type

Select an audio file type. This affects which options are available on the **Audio Format** pop-up menu.

File Extension

Select a file extension that is compatible with the current file type.

Audio Format

Select an audio format that is compatible with the current file type.

Channels

Specify the number of audio channels for the files to be created.

The following channels are available:

- **Match Input Stream**
- **Mono**
- **Stereo**

Sample Rate

Select a sample rate for the audio file. If you change this setting, a sample rate conversion takes place.

IMPORTANT

Use this only for simple conversions. For professional results, use the **Resample** plug-in and add limiting and dithering.

Bit Depth

Select a bit depth for the audio file. This option is only available for specific file types.

IMPORTANT

Reducing the bit depth is only advised for simple conversions. For professional results, it is recommended to add dithering in the **Master Section**.

Metadata

Lets you make metadata settings that are saved with the file. This option is only available for some file types.
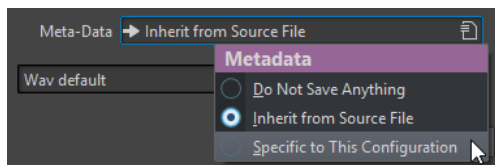
- If **Do Not Save Anything** is selected, no metadata are saved with the file.
- If **Inherit from Source File** is selected, the metadata of the source file are used. If the source metadata is empty, the default metadata is used, if available.
- If **Specific to This Configuration** is selected, you can edit the metadata, or replace it with a metadata preset. To edit the metadata, open the metadata pop-up menu again, and select **Edit**.

RELATED LINKS

Format Changes

When changing the sample rate, bit depth, and number of channels of an audio file, several operations are performed.

Sample Rate

If a new sample rate is specified, a sample rate conversion is performed.

Bit Depth

If a different bit depth is specified, the file is either truncated down to 8 bits, or padded up to 64 bits. If you are converting to a lower bit depth, you should consider adding dithering.

Mono/Stereo

If the file is converted from mono to stereo, the same material is used in both channels. If the conversion is from stereo to mono, a mix of the two channels is created.

NOTE

- If you only want to change the bit depth, you can do this in the **Audio Properties** section of the **Info** window instead, and then save the audio file.

- For high quality mastering purposes, it is not recommended to change the sample rate and number of channels using the **Audio Properties** section, but instead use plug-ins and functions of the **Master Section**.

Rendering a Selection as an Audio File

You can render a selection in the open audio file as a new audio file.

PROCEDURE

1. In the wave window, make a selection range.

2. In the **Audio Editor**, select the **Render** tab.

3. In the **Source** section, open the pop-up menu and select **Selected Audio Range**.

4. In the **Output** section, click **Render**.

5. In the **Source** section, open the pop-up menu and select **Selected Audio Range**.

6. In the **Output** section, specify a file name and location.

7. Open the **Format** pop-up menu and select **Edit Single Format**.

8. In the **Audio File Format** dialog, specify the output format and click **OK**.

9. In the **Render** section, click **Start**.

RELATED LINKS
Wave Window on page 103
Edit Tab (Audio Editor) on page 110
Audio File Format Dialog on page 124

Rendering Left/Right Channel as Audio File

You can save each channel individually into a separate file.

PROCEDURE

1. In the **Audio Editor**, select the **Render** tab.

2. In the **Output** section, specify a file name and location.

3. Open the **Format** pop-up menu and select **Edit**.

4. In the **Audio File Format** dialog, open the **Channels** pop-up menu, and select **Left Channel** or **Right Channel**.

5. Make additional output settings and click **OK**.

6. In the **Render** section, click **Start**.

Creating Audio File Format Presets

PROCEDURE

1. In the **Audio File Format** dialog, specify the audio file format.

2. Open the **Presets** pop-up menu and select **Save As**.

3. Enter a name for the preset and click **Save**.

Encoding Audio Files

Audio can be saved in different formats. The process of converting audio to another format is called encoding. When saving audio files, you can specify various encoding options for some file formats.

MP3 Encoding Dialog

You can edit the encoding options when you save an MP3 audio file.

You can open the **MP3 Encoding** dialog from most places where you can select an output file format. For example, open an audio file, select **File** > **Save As**, click in the **Format** field, and select **Edit**. In the **Audio File Format** dialog, select **MPEG-1 Layer 3 (MP3)** as type, click the **Encoding** field, and select **Edit**.
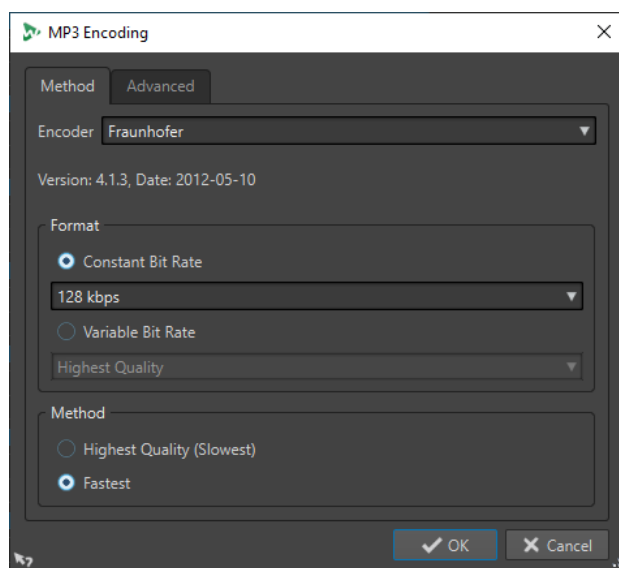
Method tab

Encoder

Lets you select the encoder (**Fraunhofer** or **Lame**).

Constant Bit Rate/Variable Bit Rate

The bit rate is related to the quantity of data used to encode the audio signal. The higher the value, the better the quality, but the larger the output file. If you choose **Variable Bit Rate**, the rate changes, according to the complexity of the audio material.

Highest Quality (Slowest)/Fastest

Select the quality that you want to achieve. The higher the quality, the more resources and time are required to analyze and compress the audio signal.

NOTE

Highest Quality (Slowest) can require a specific sample rate for the audio file. If this is the case and the sample rate is different from the input sample rate, a message is displayed.

Advanced tab

Add File Length and Playback Position Information to VBR Header

Adds additional data to the VBR header that allows the playback device to estimate the length of the MP3 file and to jump to any time position inside the MP3 file. This option is available for the Fraunhofer encoder only.

Embed Ancillary Data for Time and Delay Compensation

Embeds ancillary data so that the decoded file will exactly match the duration of the original file. This option is available for the Fraunhofer encoder only.

The following options are only available for the **Lame** encoder:

Allow Intensity Stereo Coding

Decreases the bit rate by reorganizing the intensity information between the channels.

Specify as Original Recording

Marks the encoded file as the original recording.

Write Private Bit

This is a custom flag.

Write Copyright Flag

Marks the encoded file as copyright-protected.

Write Check-Sum

Allows other applications to check the integrity of the file.

Create Long Frames

Saves space by writing fewer headers in the file (not compatible with all decoders).
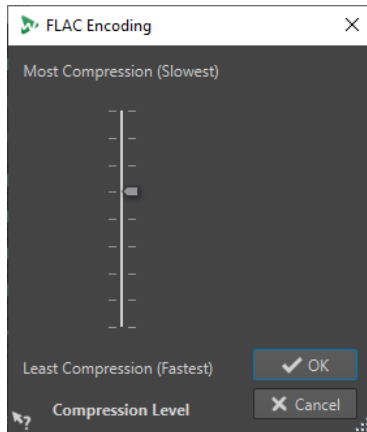
RELATED LINKS
Encoding Audio Files on page 127

AAC Encoding Dialog

You can edit the encoding options when you save an AAC audio file.

You can open the **AAC Encoding** dialog from most places where you can select an output file format. For example, open an audio file, select **File** > **Save As**, click in the **Format** field, and select **Edit**. In the **Audio File Format** dialog, select **AAC (Advanced Audio Coding)** as type, click the **Encoding** field, and select **Edit**.
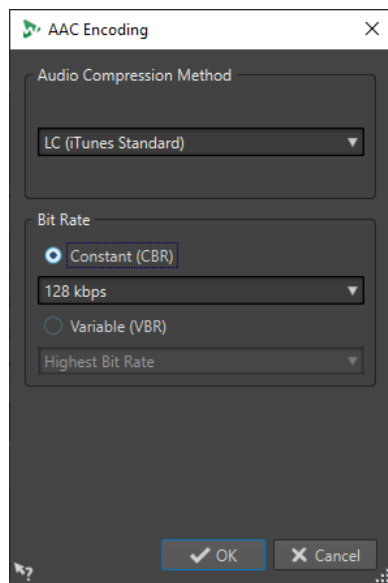
Audio Compression Method

Lets you select the audio compression method. The following options are available:

- **LC (iTunes Standard)** (Low Complexity AAC/AAC-LC) is an audio codec that provides high quality audio quality even at low bit rates.

- **HE (High Efficiency)** is an extension of Low Complexity AAC and is optimized for low-bit-rate applications, for example, streaming audio.

- **HE v2 (High Efficiency, Parametric Stereo)** enhances the compression efficiency of stereo signals. HE formats provide extremely compressed audio files with a high quality sound.

Bit Rate

The bit rate is related to the quantity of data that is used to encode the audio signal. The higher the value, the better the quality, but the larger the output file.

You can select a constant bit rate in the **Constant (CBR)** pop-up menu or a variable bit rate in the **Variable (VBR)** pop-up menu. If you choose **Variable (VBR)**, the rate changes over time according to the complexity of the audio material.

RELATED LINKS

MPEG-1 Layer 2 Encoding Dialog

You can edit the encoding options when you save an MPEG-1 Layer 2 (MP2) audio file.

You can open the **MPEG-1 Layer 2 Encoding** dialog from most places where you can select an output file format. For example, open an audio file, select **File** > **Save As**, click in the **Format** field, and select **Edit**. In the **Audio File Format** dialog, select **MPEG-1 Layer 2** as type, click the **Encoding** field, and select **Edit**.
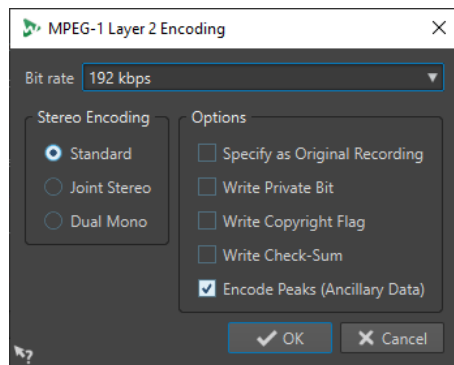
Bit Rate

Determines the bit rate. The bit rate is related to the quantity of data that is used to encode the audio signal. The higher the value, the better the quality, but the larger the output file.

Stereo Encoding

In **Standard** mode, the encoder does not use the correlation between channels. However, the encoder can take space from a channel that is easy to encode and use it for a complicated channel.

In **Joint** mode, the encoder uses the existing correlations between the two channels to increase the ratio quality/space.

In **Dual** mode, both channels are independently encoded. This mode is recommended for signals with independent channels.

Specify as Original Recording

Marks the encoded file as the original recording.

Write Private Bit

This is a custom flag.

Write Copyright Flag

Marks the encoded file as copyright-protected.

Write Check-Sum

Allows other applications to check the integrity of the file.

Encode Peaks (Ancillary Data)

This must be activated for compatibility with specific systems, for example, DIGAS.

FLAC Encoding Dialog

You can edit the encoding options when you save a FLAC audio file.

You can open the **FLAC Encoding** dialog from most places where you can select an output file format. For example, open an audio file, select **File** > **Save As**, click in the **Format** field, and select **Edit**. In the **Audio File Format** dialog, select **FLAC** as type, click the **Encoding** field, and select **Edit**.

Compression Level

Lets you specify the compression level. The more compression, the slower the encoding.

Ogg Vorbis Dialog

You can edit the encoding options when you save an Ogg Vorbis audio file.

You can open the **Ogg Vorbis** dialog from most places where you can select an output file format. For example, open an audio file, select **File** > **Save As**, click in the **Format** field, and select **Edit**. In the **Audio File Format** dialog, select **Ogg Vorbis** as type, click the **Encoding** field, and select **Edit**.
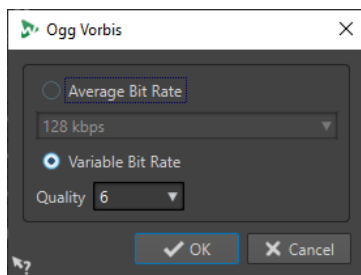
Average Bit Rate

If this option is activated, the average bit rate in the file remains constant during encoding. Because the file size is proportional to time, the localization of a given point is easier, but it can result in a lower quality compared to the **Variable Bit Rate** option.

Variable Bit Rate

If this option is activated, the bit rate in the file will vary during encoding, depending on the complexity of the material. This can give a better quality/size ratio in the resulting file.

In the **Quality** field, select the quality. Lower quality settings result in smaller files.

RELATED LINKS

Windows Media Audio Encoding Dialog

You can edit the encoding options when you save a Windows Media Audio (WMA) audio file. This dialog is only available in on Windows systems.

You can open the **Windows Media Audio** dialog from most places where you can select an output file format. For example, open an audio file, select **File** > **Save As**, click in the **Format** field, and select **Edit**. In the **Audio File Format** dialog, select **Windows Media Audio (WMA)** as type, click the **Encoding** field, and select **Edit**.
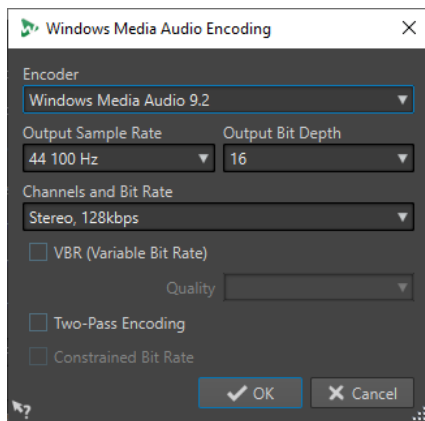
Encoder

Sets the encoder.

Output Sample Rate

Sets the output sample rate of the encoded file. The higher the sample rate, the higher the quality, but the larger the output file.

Output Bit Depth

Sets the output bit depth of the encoded file. This parameter is not available for all encoders.

Channels and Bit Rate

The available items here depend on the selected encoding method and the output sample rate.

VBR (Variable Bit Rate)

If this option is activated, the bit rate in the file will vary during the encoding, depending on the complexity of the material. This can produce a better quality/size ratio in the output file.

In the **Quality** field, select the quality. Lower quality settings result in smaller files.

Two-Pass Encoding

If this option is activated, the encoding quality increases, but the process takes twice as long.

Constrained Bit Rate

This option is available when the **VBR** and **Two-Pass Encoding** options are activated. This is used to maintain the bit rate within limits to avoid peaks. This is recommended for media, such as CD or DVD.

RELATED LINKS
Encoding Audio Files on page 127

Inserting Audio Files into Another Audio File

You can assemble an audio file from several audio files.

PROCEDURE

1. In the **Audio Editor**, open the audio file in which you want to insert another audio file.

2. If you want to insert an audio file at the edit cursor position, make sure that **Snap to Magnets** is activated, and that **Cursor** is activated on the **Magnet** pop-up menu.

   The edit cursor snaps to the nearest zero crossing. This avoids glitches.

3. Select the **Insert** tab.

4. In the **Audio File** section, select one of the following insert options:

   - **At Start**

   - **At End**

   - **At Cursor**

   If you select **At Cursor**, the audio file is split at the insert position. The part after the split is moved to the right.

5. On the pop-up menu, select the audio file that you want to insert.

RELATED LINKS
Magnetic Bounds in Audio Files on page 106

Turning Selections Into New Files

You can turn selections into new files via drag and drop, via the context menu in the wave window, or by using the **Render** tab in the **Audio Editor**.

RELATED LINKS
Render Tab (Audio Editor) on page 114
Turning Selections Into New Files By Dragging on page 133
Turning Selections Into New Files Using the Menu on page 134

Turning Selections Into New Files By Dragging

PROCEDURE

1. Make a selection in the wave window.

2. Drag the selection to the tab bar above the wave window and release the mouse button.

RESULT

The selection opens in a new stereo window.

Turning Selections Into New Files Using the Menu

PROCEDURE

1. Make a selection in the wave window.

2. Right-click the selection and select **Copy Selection to New Window**.

3. From the submenu, select one of the following options:

   - **Duplicate**

   - **Stereo Version**

   - **Mono Mixdown**

   - **Mono Mixdown (Subtract Right Channel from Left Channel)**

RESULT

The selection opens in a new stereo or mono window.

Special File Format Dialog

When opening files via the **Unknown Audio** option, you can specify how to interpret the format of the audio file that you want to open.

- To open the **Special File Format** dialog, select **File** > **Import**, click **Unknown Audio**, and select the file that you want to open.
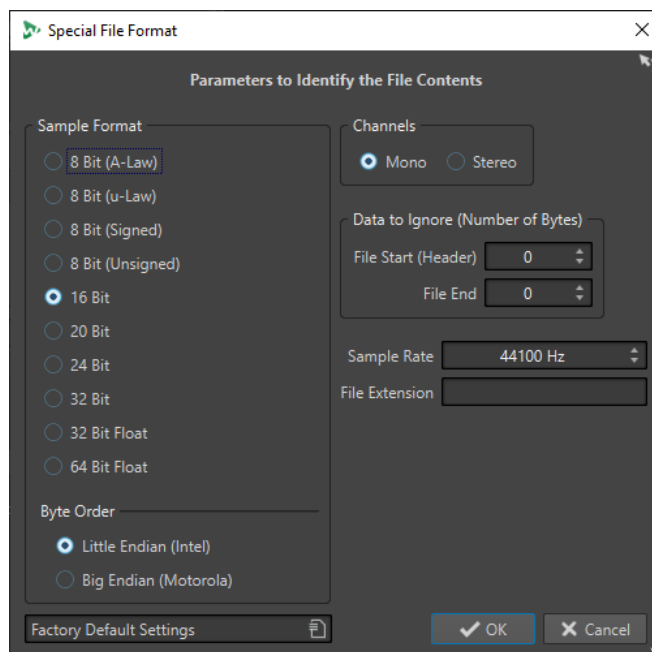
Sample Format

Specifies the binary representation of the samples in the file.

Byte Order

Specifies the order in which bytes should be interpreted. This only applies for 16 bit or more.

Channels

Specifies the number of audio channels in the audio file.

Data to Ignore (Number of Bytes)

Specifies how many bytes at the start and end of the audio file are ignored.

Sample Rate

Specifies the sample rate of the audio file.

File Extension

Specifies the default file name extension for the audio file. When the file selector opens after closing this dialog, only the file with this extension is displayed.

Converting From Stereo to Mono and From Mono to Stereo

You can convert audio files from mono to stereo and from stereo to mono. Converting a mono file into a stereo file produces an audio file that contains the same material in both channels, for example for further processing into real stereo. Converting a stereo file into a mono file mixes the stereo channels to a mono channel.

RELATED LINKS
Converting a Selection From Stereo to Mono on page 135
Converting From Stereo to Mono While Saving on page 136
Converting a Selection From Mono to Stereo on page 136

Converting a Selection From Stereo to Mono

PROCEDURE

1. Make a stereo selection in the wave window.

2. Select **File** > **New**.

3. Select **Audio File** > **From Current File**.

4. Select one of the following options:

   - To mix the left and right stereo channels when converting to mono, click **Mono Mixdown**.

   - To mix the left channel with the inverse of the right channel when converting to mono, click **Mono Mixdown (Subtract Right Channel from Left Channel)**.

     The resulting mono wave contains the difference between the channels. For example, this allows you to verify that a wave file really is a true stereo file rather than a mono file converted to stereo format.

RESULT

The selection opens in a new mono window.

RELATED LINKS
Wave Window on page 103

Converting From Stereo to Mono While Saving

PROCEDURE

1. Make a stereo selection in the wave window.

2. Select **File** > **Save As**.

3. In the **Save As** window, specify a file name and location.

4. Click in the **Format** field and select **Edit**.

5. In the **Audio File Format** dialog, open the **Channels** pop-up menu and select one of the mono settings.
   For example, when selecting **Mono (Mix -3 dB)**, the resulting audio file is attenuated by 3 dB.

6. Click **OK**.

7. Click **Save**.

RELATED LINKS
[Wave Window](#) on page 103
[Audio File Format Dialog](#) on page 124

Converting a Selection From Mono to Stereo

PROCEDURE

1. Make a mono selection in the wave window.

2. Select **File** > **New**.

3. Select **Audio File** > **From Current File**.

4. Click **Stereo Version**.

5. Click **Create**.

RESULT

The selection opens in a new stereo window.

RELATED LINKS
[Wave Window](#) on page 103

Swapping Channels in a Stereo File

You can swap the two channels in an audio file, that is, you can move the audio in the left channel to the right channel, and the audio in the right channel to the left channel.

● To swap the channels of the whole audio file in the **Audio Editor**, select the **Edit** tab, and in the **Cutting** section, click **Swap Stereo Channels**.

● To swap the channels of only a selected range of the audio file, make a selection range in the wave window, select the **Edit** tab, and in the **Other** section, click **Swap Stereo Channels**.

Special Paste Options

On the **Paste** pop-up menu in the **Audio Editor**, you find additional paste options.

● To access the special paste option, open the **Audio Editor**, select the **Edit** tab, and in the **Clipboard** section, right-click **Paste**.

Overwrite

Overwrites data in the destination file, rather than moving data to make room for the inserted audio. How much is overwritten depends on the selection in the destination file:

- If there is no selection in the destination file, a section with the same length as the pasted selection is overwritten.

- If there is a selection in the destination file, the pasted selection replaces that selection.

Append

Adds the pasted audio after the end of the file.

Prepend

Adds the pasted audio before the beginning of the file.

Multiple Copies

Opens a dialog in which you can enter the number of copies that you want to create.

Mix

Opens the **Mix** dialog. Here, you can blend two files into each other, starting at the selection or, if there is no selection, at the cursor position. You can specify the gain for the audio on the clipboard and at the destination.

All the data on the clipboard is always mixed in, regardless of the length of the selection.

Moving Audio

You can rearrange the order of the audio in a file by dragging, and cutting and pasting.

Moving Audio by Dragging

PROCEDURE

1. In the wave window, make a selection.

2. Drag the selection to a position outside the selection in the same file, or to another wave window.

RESULT

The selection is removed from its original position and inserted where you drop it.

NOTE

To undo a move between two files you must first undo the paste in the destination window and then undo the cut operation in the source window.

RELATED LINKS
Wave Window on page 103

Moving Audio Using Cut and Paste

PROCEDURE

1. In the wave window, make a selection.

2. Cut the audio in one of the following ways:

- In the **Audio Editor**, select the **Edit** tab, and click **Cut**.
- Press `Ctrl/Cmd`-`X`.

3. Select how you want to insert the selection:

- If you want to insert the audio, click once at the position in the same file or in another file.
- If you want to replace a section of audio, select it.

4. To paste the selection, do one of the following:

- In the **Audio Editor**, select the **Edit** tab, and click **Paste**.
- Press `Ctrl/Cmd`-`V`.

RESULT

The selection is removed from its original position and inserted where you drop it.

NOTE

To undo a move between two files you must first undo the paste in the destination window and then undo the cut operation in the source window.

RELATED LINKS
Wave Window on page 103
Edit Tab (Audio Editor) on page 110

Moving Audio by Nudging

The nudge left/right tools can be used to move the audio in small steps within a file.

PROCEDURE

1. In the wave window, make a selection.

2. In the **Audio Editor**, select the **Edit** tab.

3. In the **Nudge** section, click **Nudge Left** or **Nudge Right**.

RESULT

The audio is moved one pixel. Exactly how much this is depends on how far you are zoomed in. For example, if the status bar displays **x1:256**, the selection is moved 256 samples. The moved section overwrites the audio at that position.

RELATED LINKS
Wave Window on page 103
Edit Tab (Audio Editor) on page 110

Copying Audio

You can copy sections of audio within the same file or between audio files.

Stereo/Mono Handling

When you drag or copy stereo or mono files to other locations, the target location determines how the files are inserted.

Stereo/Mono is handled as follows when you drag between files:

Dragged section	Drop wave	Action
Stereo	Stereo	The dragged audio is always inserted into both channels.
Stereo	Mono	Only the left channel is inserted.
Mono	Stereo	What happens depends on the vertical drop position. This is indicated by the cursor shape. The selection can be inserted into only one of the channels, or the same material can be inserted into both channels.

Stereo/Mono is handled as follows when you copy and paste files:

Copied section	Paste wave	Action
Stereo	Stereo	If the wave cursor extends across both channels of the destination file, the material is inserted into both channels.
Mono	Mono	If the wave cursor is only in one channel, the audio is only pasted in that channel. Material from the left channel is pasted in the left channel and material from the right channel is pasted in the right channel.
Stereo	Mono	Only the left channel is pasted.
Mono	Stereo	What happens depends on whether the wave cursor is in one channel or both. The audio is either pasted in one of the channels, or the same material is inserted into both channels.

Sample Rate Conflicts

If you copy or move audio from one window to another, and the sample rates of the two files are not the same, the copied/moved sound plays back at the wrong pitch (speed). The program warns you if this is about to happen.

While mixing sample rates can be used as an effect, it is most often not intended. There are two ways to get around this:

● Convert the sample rate of the source file to the same rate as the destination file before editing.

- Convert the sample rate of the destination file to the same rate as the source file before adding the audio.

Copying Audio Using Copy and Paste

PROCEDURE

1. In the wave window, make a selection.

2. Use one of the following copy methods:

    - In the **Audio Editor**, select the **Edit** tab, and click **Copy**.

    - Press `Ctrl/Cmd` - `C` .

3. Select how you want to insert the selection:

    - If you want to insert the audio, click once at the position in the same file or in another file.

    - If you want to replace a section of audio, select it.

4. To paste the selection, do one of the following:

    - In the **Audio Editor**, select the **Edit** tab, and click **Paste**.

    - Press `Ctrl/Cmd` - `V` .

RELATED LINKS
Wave Window on page 103
Edit Tab (Audio Editor) on page 110

Copying Audio by Dragging

PROCEDURE

1. In the wave window, make a selection.

2. Click the middle of the selection, and drag it to a position outside the selection in the same file, or to another wave window.

RESULT

The selection is inserted at the indicated point. The audio that previously began at that point is moved to the right.

RELATED LINKS
Wave Window on page 103

Mixing Down – Audio Files Rendering

You can render regions of an audio files or whole audio files to a single audio file.

RELATED LINKS
Rendering in the Master Section on page 278
Rendering Audio Files on page 141

Rendering Audio Files

You can render audio files to a single audio file format or to multiple audio file formats at the same time.

PREREQUISITE

Set up your audio file.

PROCEDURE

1. In the **Audio Editor**, select the **Render** tab.
2. In the **Source** section, specify which part of the audio file you want to render.
3. In the **Result** section, activate **Named File**.
4. In the **Output** section, click the **Format** field and click **Edit**.
5. Make your settings in the **Audio File Format** dialog.
6. Click **OK**.
7. Optional: Make additional settings on the **Render** tab.
8. In the **Render** section, click **Start Rendering**.

RESULT

The audio file is rendered.

RELATED LINKS
Render Tab (Audio Editor) on page 114
Audio File Format Dialog on page 124

Changing the Audio Properties

You can change the sample rate and bit depth of audio files.

Changing these values does not process the audio file in any way (in contrast to using **Save As**). However, the following rules apply:

● If you change the sample rate, the file plays back at a new pitch.
● If you change the bit depth, the file is converted to the new precision the next time you save it.

NOTE

There is no undo for this. If you save a file with a lower bit depth, the file is converted permanently.

PROCEDURE

1. In the **Audio Editor**, open an audio file.
2. Select the **File** tab.
3. Click **Info**.
4. In the **Audio Properties** section, select a new **Sample Rate** and/or **Bit Depth**.
5. Click **Apply Changes**.

Metadata

Metadata consists of attributes that describe the audio contents, for example, the title of the track, the author, or the recording date of the track. Depending on the file format of the selected audio file, this data varies.

When opening an audio file or audio montage, the metadata found in the file is loaded. You can create different metadata presets for audio files and audio montages. When creating a new file from a template, this file can inherit the metadata of the preset, if available.

A preview of the metadata is displayed in the **Metadata** window. To view the complete metadata of a file and to be able to edit the metadata, open the **Metadata** dialog.

Not all file formats can save metadata. Depending on the output file format, all metadata or only part of the metadata is saved in an audio file. The following file formats can contain metadata:

- .wav
- .mp3
- .ogg
- .wma
- .flac
- .m4a
- .mp4

For MP3, the following metadata types are available:

- ID3v1 and ID3v2, including picture support

NOTE

- MP4 is not ID3v2-compatible. However, in WaveLab Elements it uses the same editor.
- The metadata codes that are followed by an "(i)" indicate the iTunes-compatible fields. Lyrics and pictures are also iTunes-compatible.

For WAV, the following metadata types are available:

- RIFF
- BWF
- BWF markers
- CART (AES standard, dedicated to broadcast needs)
- ID3, including picture support

When saving or recording an audio file in the **Audio File Format** dialog, you can specify whether not to use any metadata, inherit the metadata from the source file, or edit the metadata of the file.
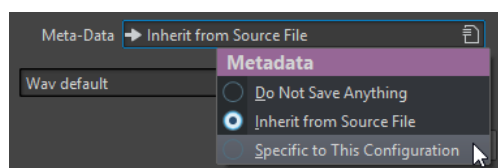
Metadata can be entered manually or generated automatically.

The following options can be generated automatically:

- Unique Source Identifier (USID)

  You can activate **USID** on the **Basics** tab of the **BWF** tab.

- Time markers (**CART** tab)

WaveLab Elements includes several metadata presets. They are used as examples and can be customized to your needs. You can load metadata presets from the **Metadata Presets** pop-up menu in the **Audio File Format** dialog, or from the **Metadata** dialog.

RELATED LINKS

Metadata Window

In the **Metadata** window, you can see and edit metadata of the file in the **Audio Editor**, **Audio Montage** window, or **Batch Processor** window.

- To open the **Metadata** window, open the **Audio Editor**, **Audio Montage** window, or **Batch Processor** window, and select **Tool Windows** > **Metadata**.
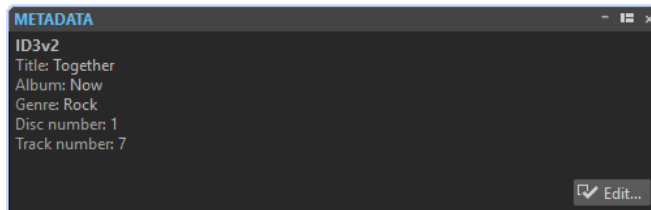
When you select an audio file in the **File Browser** window, the corresponding metadata is displayed in the **Metadata** window and the metadata section of the **Info** tab. When you click elsewhere, the **Metadata** window displays the metadata of the selected audio file, audio montage, or batch process.

Preview

The preview window displays the metadata of the selected audio file, audio montage, or batch process.

Edit

Opens the **Metadata** dialog, where you can view and edit the complete metadata of the selected file.

RELATED LINKS

Metadata Dialog

This dialog allows you to define the metadata to be embedded in your audio file.

- To open the **Metadata** dialog, open the **Metadata** window and click **Edit**.

Depending on the file type, the metadata is handled differently.
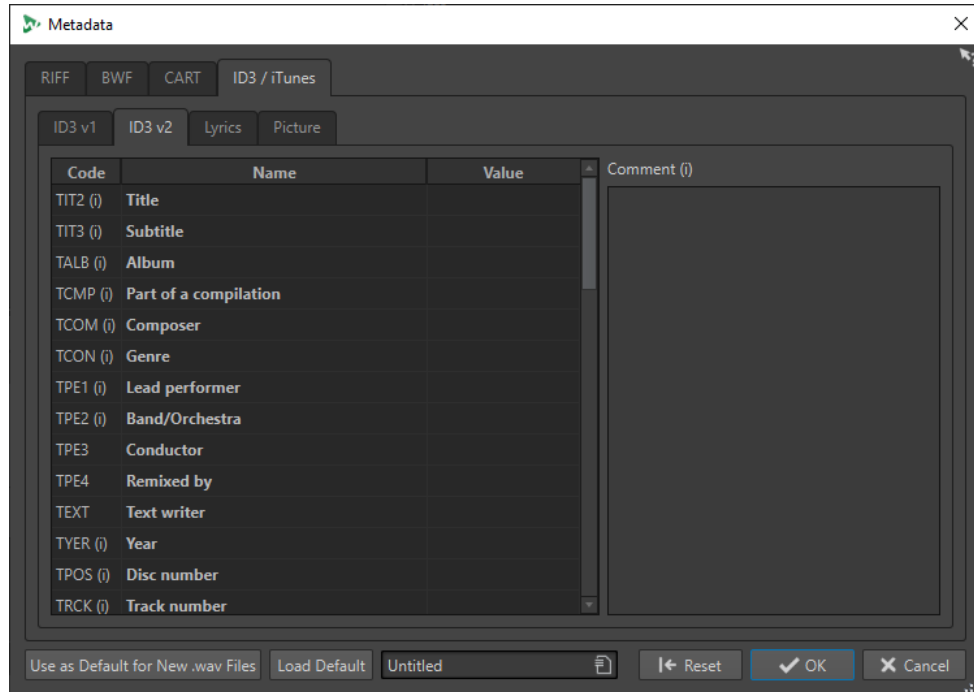
Metadata dialog for WAV files

When opening the **Metadata** dialog for files in the **Audio Editor**, you can edit the metadata that is saved in the audio file. This metadata is saved to disk later.

When opening the **Metadata** dialog for files in the **Audio Montage** window, you can edit the metadata for the audio files that are created when rendering the audio montage. If you render to WAV or MP3 formats, the metadata will be associated to these files.

RELATED LINKS

Editing Metadata

You can edit metadata of audio files, audio montages, and batch processes.

PREREQUISITE
You have opened an audio file, audio montage, or batch process.

PROCEDURE

1. In the **Metadata** window, click **Edit**.

2. In the Metadata dialog, make your settings.

3. Click **OK**.

Metadata Presets

In the **Metadata** dialog, you can save metadata presets and apply these presets to other files. Metadata presets can be applied to WAV, MP3, MP4, and M4A files.
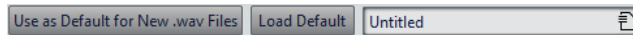
The **Use as Default for New .wav Files** option allows you to define a set of metadata as default.

When you create a new file, and do not add any metadata, this default metadata is applied to the file when saving or rendering it. For example, you can save or record WAV files with BWF metadata and automatically add a Unique Material Identifier.

To edit the default metadata preset, select **Load Default**, and edit the preset.

CART and Markers

WaveLab Elements reads the CART markers, if any, and merges them with the existing markers of the file.

The CART standard can contain up to 8 markers. WaveLab Elements saves them if their names conform to the CART standard.

If **Generate Time Markers** is activated in the **CART** tab of the **Metadata** dialog, the markers are generated if at least one CART text field has content. Otherwise, the CART data is meant to be unused.

To be able to merge the CART markers with the markers of a file when rendering a file, the option **Copy Markers** must be activated using the **Render** function in the **Master Section**.

Silence Generator Dialog

This dialog allows you to insert silence in an audio file.

- To open the **Silence Generator** dialog, select the **Insert** tab in the **Audio Editor**, and click **Silence Generator**.
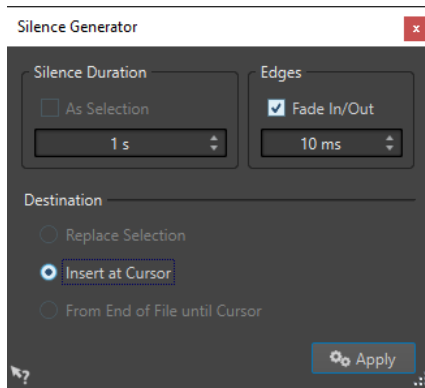
Silence Duration

> **As Selection** uses the duration of the active audio selection as the duration of the silent section. Specify the duration of the silent section in the value field below.

Edges

> **Fade In/Fade Out** performs a crossfade at the start and end of the silent section for smoother transitions. Specify the fade time in the value field below.

Destination

> - **Replace Selection** replaces the current audio selection with the silent section.
>
> - **Insert at Cursor** inserts the silent section at the cursor position.
>
> - **From End of File Until Cursor** extends the audio file with silence up to the cursor position. Activating this option also defines the silence duration and ignores the **Silence Duration** setting.

RELATED LINKS
Inserting Silence on page 146

Replacing a Selection with Silence

You can replace a section of an audio file with silence.

PROCEDURE

1. In the **Audio Editor**, make a selection.

2. Select the **Insert** tab.

3. In the **Signal** section, click **Silence Generator**.

4. In the **Silence Generator** dialog, set the silence duration to **As Selection**, and the destination to **Replace Selection**.

5. Click **Apply**.

RELATED LINKS
Insert Tab (Audio Editor) on page 113
Silence Generator Dialog on page 145

Inserting Silence

You can insert a specified length of silence at any position of the audio file.

PROCEDURE

1. In the **Audio Editor**, set the cursor where you want the inserted silence to begin.

2. Select the **Insert** tab.

3. In the **Signal** section, click **Silence Generator**.

4. In the **Silence Generator** dialog, deactivate **As Selection**, and specify the length.

5. Set the destination to **Insert at Cursor**.

6. Click **Apply**.

RELATED LINKS
Insert Tab (Audio Editor) on page 113
Silence Generator Dialog on page 145

Muting a Selection

The **Mute Selection** function replaces the selection with true silence.

PROCEDURE

1. In the wave window of the **Audio Editor**, make a selection.

2. Select the **Insert** tab.

3. In the **Signal** section, click **Mute Selection**.

RELATED LINKS
Insert Tab (Audio Editor) on page 113

Replacing Audio with Tone

You can replace a part in an audio file with tone to cover a swear word, for example.

PROCEDURE

1. In the **Audio Editor**, make a selection.

2. Select the **Insert** tab.

3. In the **Signal** section, click **Bleep Censor**.

4. In the **Bleep Censor** dialog, specify the frequency and the level of the bleep censor tone.

5. Optional: Activate **Crossfading** and specify the crossfade time.

    This creates a crossfade at the start and the end of the bleep censor region.

6. Click **Apply**.

RELATED LINKS
Insert Tab (Audio Editor) on page 113
Bleep Censor Dialog on page 148

Bleep Censor Dialog

The **Bleep Censor** dialog allows you to define the bleep censor tone.

- To open the **Bleep Censor** dialog, select the **Insert** tab in the **Audio Editor**, and click **Bleep Censor** in the **Signal** section.
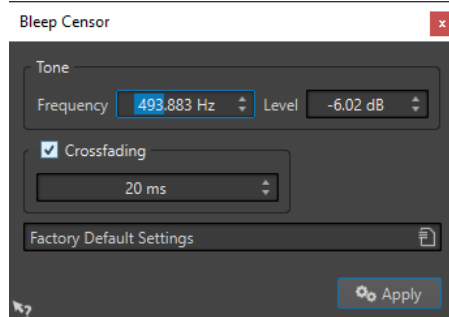
Frequency

Allows you to specify the frequency of the bleep censor tone.

Level

Allows you to specify the level of the bleep censor tone.

Crossfading

If this option is activated, WaveLab Elements creates a crossfade at the start and the end of the bleep censor region for a smoother transition. You can specify the crossfade time.

Presets

This pop-up menu allows you to save and restore bleep censor presets.

RELATED LINKS
Insert Tab (Audio Editor) on page 113
Replacing Audio with Tone on page 147

Waveform Restoration with the Pen Tool

The **Pen** tool allows you to redraw the waveform in the wave window. This can be used to quickly repair waveform errors. The **Pen** tool can be used if the zoom resolution is set to 1:8 (one pixel on the screen equals 8 samples) or higher.
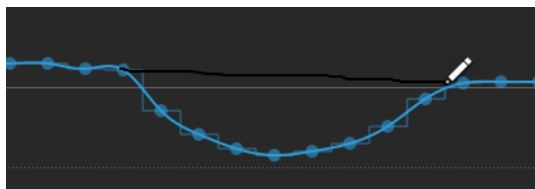
- To redraw the waveform, select the **Pen** tool on the **Edit** tab of the **Audio Editor**, click in the waveform, and draw the new waveform.

- To redraw the waveform of both channels at once, press Shift during the drawing process.

RELATED LINKS
Edit Tab (Audio Editor) on page 110

Audio Analysis

WaveLab Elements provides you with a comprehensive set of tools for analyzing your audio and for detecting any errors.

For example, you can use the suite of audio meters or the **3D Frequency Analysis**. There are also several tools that help you examine any sample of your audio for errors or anomalies.

RELATED LINKS
3D Frequency Analysis on page 158
Global Analysis on page 149

Global Analysis

In WaveLab Elements, you can perform advanced analysis on your audio to identify areas with specific properties. This helps you find problem areas such as glitches or clipped samples. You can also check general information, such as the pitch of a sound.

If you analyze a section of an audio file, WaveLab Elements scans the section or the audio file and extracts information which is displayed in the dialog. WaveLab Elements also marks sections of the file that meet specific characteristics, for example, sections that are very loud or almost silent. You can then browse between these points, set markers, or zoom in on markers. On most of the tabs, you find settings that determine exactly how the analysis is performed. Each tab focuses on a particular analysis area.

You perform the global analysis in the **Global Analysis** dialog. This dialog consists of the following tabs that provide different analysis types:

- The **Peaks** tab allows you to find individual samples with very high values.
- The **Loudness** tab allows you to find sections with high intensity.
- The **Pitch** tab allows you to find the exact pitch of a sound or section.
- The **Extra** tab provides information about DC offsets and the significant bit depth.
- The **Errors** tab allows you to find glitches and sections where the audio has been clipped.

Most of the analysis types provide a number of positions in the file that indicate peaks, glitches, etc. These points are called "hot points".

Preparing the Global Analysis

The **Global Analysis** dialog provides various analysis options.

PROCEDURE

1. In the wave window, select a range in the audio file that you want to analyze.

   If you want to analyze the entire file, press `Ctrl/Cmd`-`A`. If **Process Whole File If There Is No Selection** is activated in the **Audio Files Preferences**, the whole file is analyzed automatically provided that no selection has been made.

2. In the **Audio Editor**, select the **Process** tab.

3. In the **Analysis** section, click **Global Analysis**.

4. Optional: Click **Open New Global Analysis Dialog** at the top of the **Global Analysis** dialog to open another **Global Analysis** dialog.
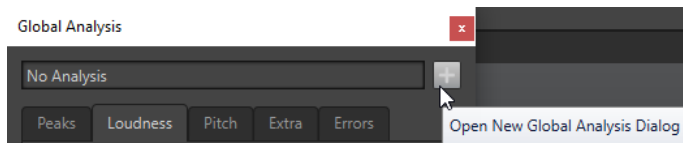
RELATED LINKS
Global Analysis on page 149

Choosing the Analysis Type

Several types of analysis can be performed. Each of them takes some time, so make sure that only the types that you need are included in the analysis.

Select the analysis types in the **Global Analysis** dialog by activating them in the corresponding tabs.

● To include the peaks analysis, select the **Peaks** tab and activate **Find Peaks**.

● To include the loudness analysis, select the **Loudness** tab and activate **Analyze Loudness**.

● To include the pitch analysis, select the **Pitch** tab and activate **Find Average Pitch**.

● To include the DC offset analysis, select the **Extra** tab and activate **Find DC Offset**.

● To include the error analysis, select the **Errors** tab and activate **Find Possible Glitches** and/or **Find Clipped Samples**.

RELATED LINKS
Global Analysis on page 149

Peaks Tab (Global Analysis)

On this tab, you can make settings that help you find digital peak values in the audio, that is, single samples with very high values.

● In the **Global Analysis** dialog, select the **Peaks** tab.
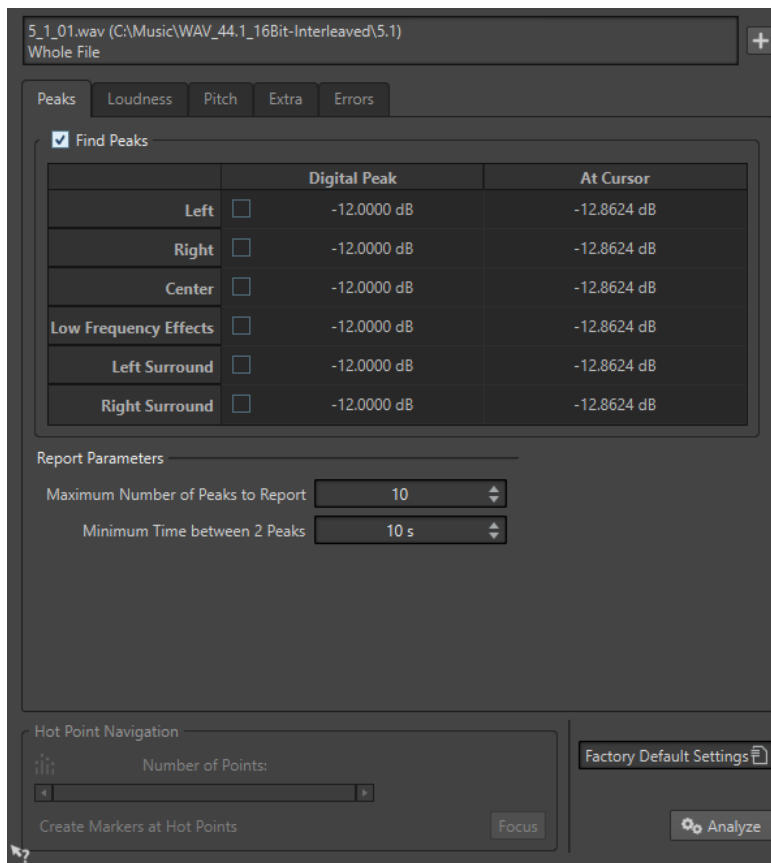
Find Peaks

Enables peak analysis.

Digital

Displays the highest peak in the analyzed section. When you click this value, the number of peaks that are detected in the selection is shown in the **Number of Points** section in the lower left corner of the dialog. You can use the hot points to move the cursor between the peaks.

At Cursor

Displays the level at the current audio file cursor position at the time of the analysis.

Maximum Number of Peaks to Report

Restricts the number of reported peaks. For example, setting this to **1** reports only the highest peak.

Minimum Time between 2 Peaks

Controls the distance between peaks, so they do not appear too close to each other. For example, setting this to **1 s** ensures that there is always at least one second between reported peaks.

Results of the Analysis

The **Find Peaks** fields show the highest peak in the analyzed section and the level of the sample at the wave cursor position at the time of the analysis.

RELATED LINKS

Loudness Tab (Global Analysis)

On this tab, you can make settings that help you find sections that are perceived by the human ear as louder or weaker in volume. To find sections that the ear perceives as significant in volume, you must look at a longer section of audio.

● In the **Global Analysis** dialog, select the **Loudness** tab.

Loudness Settings
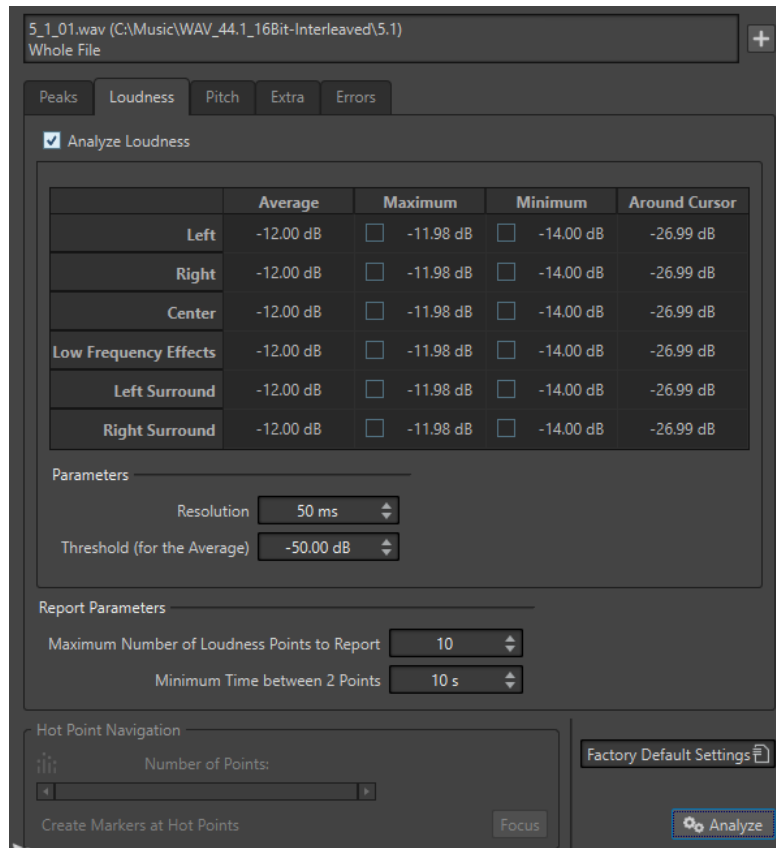
Analyze Loudness

Enables RMS loudness analysis.

Average

Displays the overall loudness of the analyzed selection.

Maximum

Displays the level of the loudest section in the analyzed selection. Clicking this value displays the number of loud sections detected within the selection in the **Number of Points** section in the lower left corner of the dialog.

Minimum

Displays the level of the quietest section in the analyzed selection. Clicking this value displays the number of weak sections that are detected within the selection in the **Number of Points** section in the lower left corner of the dialog. This provides adequate information about the signal-to-noise ratio (SNR) of the audio material.

Around Cursor

Displays the loudness at the audio file cursor position at the time of the analysis.

Resolution

The length of audio to be measured and averaged. If this value is lowered, short passages of loud/weak audio are detected. If the value is raised, the sound must be loud/weak for a longer period to result in a hot point.

Threshold (for the Average)

Ensures that the average value is calculated correctly for recordings with pauses. The value that you set here determines a threshold below which any detected audio is considered to be silence, and is therefore excluded from average value calculations.

Maximum Number of Loudness Points to Report

Restricts the number of reported hot points. The highest points are reported. For example, setting this to **1** reports only the loudest section or one of the sections with the same highest value.

Minimum Time between 2 Points

Controls the distance between points, so they do not appear too close to each other. For example, setting this to **1 s** ensures that there is always at least one second between reported points.

RELATED LINKS
Global Analysis on page 149

Pitch Tab (Global Analysis)

On this tab, you can make settings that help you find the average pitch of an audio section.

- In the **Global Analysis** dialog, select the **Pitch** tab.
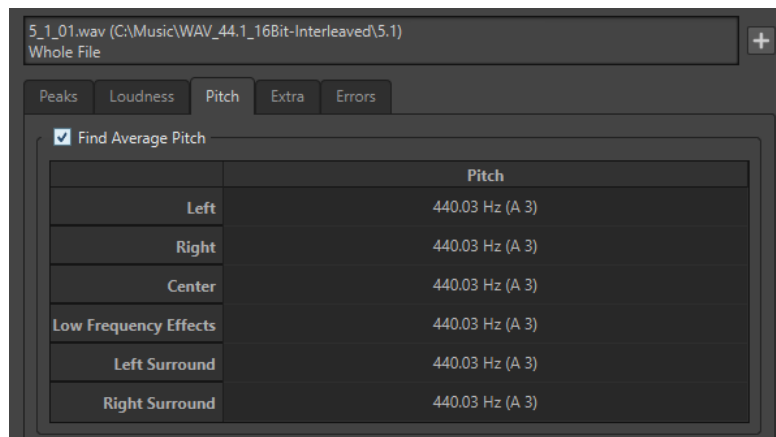
Settings on this tab allow you to gather information for pitch shifting, for example, to get one sound in tune with another. The display shows the pitch for each channel, in Hertz (Hz) and as semitones and cents (hundredths of a semitone). Because the display shows an overall value for the entire analyzed section, the hot point controls in the lower section of the dialog are not used on this tab.

Usage guidelines for the **Pitch** tab:

- The result is an average value for the whole selection.

- The method only works on monophonic material, not on chords or harmonies.

- The algorithm assumes that the analyzed section has a reasonably stable pitch.

- The material must be relatively well isolated from other sounds.

- It is preferable to analyze the sustain portion of a sound rather than the attack. The pitch is usually not stable during the attack.

- Some synthetic sounds may have a weak fundamental (first harmonic) which can irritate the algorithm.

RELATED LINKS
Global Analysis on page 149

Extra Tab (Global Analysis)

This tab shows the average DC Offset of the analyzed section and the **Apparent Bit Depth**.

- In the **Global Analysis** dialog, select the **Extra** tab.
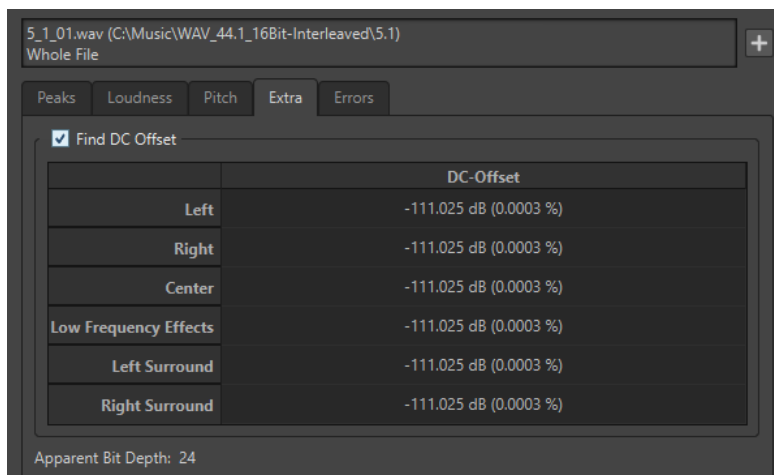
The **Apparent Bit Depth** attempts to detect the actual precision in the audio. This is useful, for example, if you want to check, whether a 24-bit file really uses 24 bits or if it was actually recorded with 16-bit precision and then expanded to 24 bits.

RELATED LINKS
Global Analysis on page 149

Errors Tab (Global Analysis)

This tab helps you find glitches and sections where the audio has clipped.

- In the **Global Analysis** dialog, select the **Errors** tab.
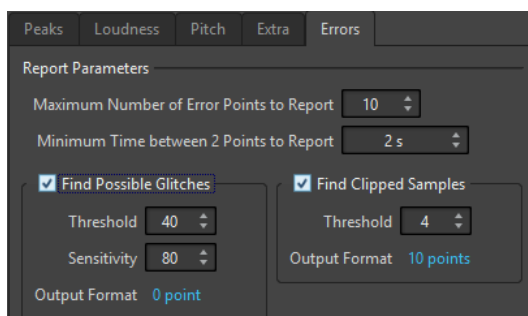
Maximum Number of Error Points to Report

Allows you to restrict the reported number of hot points.

Minimum Time between 2 Points to Report

Controls the distance between points, so they do not appear too close to each other. For example, setting this to **1 s** ensures that there is always at least one second between reported points.

Find Possible Glitches

Enables glitch analysis.

- **Threshold** sets the value at which a change in level is considered to be a glitch. The higher the value, the less sensitive the detection.

- **Sensitivity** is a length value that represents the length of time in which the waveform must exceed the threshold to be reported as a glitch. The higher the value, the less sensitive the detection.

- **Output Format** displays the number of clipping occurrences that are detected by the analysis. Clicking this value displays the number of clips in the **Number of Points** section in the lower left corner of the dialog.

NOTE

Make sure that the points that are detected by the algorithm are real glitches. Zoom in and play back to check whether the detected points really indicate a problem.

Find Clipped Samples

Enables clipping analysis.

- **Threshold** checks for a number of consecutive samples at full value to determine whether clipping has occurred. The **Threshold** setting determines the exact number of these consecutive samples that must occur for the program to report clipping.

- **Output Format** displays the number of clipping occurrences that are detected by the analysis. Clicking this value displays the number of clips in the **Number of Points** section in the lower left corner of the dialog.

RELATED LINKS

Error Detection

You can detect errors, such as glitches and sections where the audio has clipped.

Glitches

- These are disruptions in the audio. Glitches may occur after problematic digital transfers, after careless editing, etc. They manifest themselves as "clicks" or "pops" in the audio.

Clipping

- A digital system has a finite number of levels that it can represent properly. When recorded sound levels are too high or when the system cannot handle levels that have been raised by digital processing, hard clipping occurs that you can hear as strong distortion.
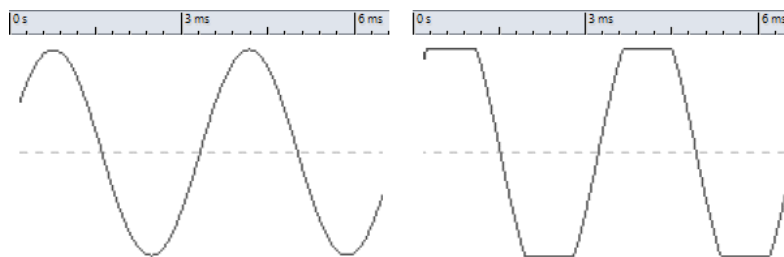
A sine waveform before clipping and after.

Result of the Analysis

This reports the number of glitches and clipping instances that have been detected.

Performing a Global Analysis

PREREQUISITE

In the **Audio Editor**, select the **Analyze** tab, click **Global Analysis**, and select the tab that you want to include in the analysis.

PROCEDURE

1. In the **Global Analysis** dialog, set up the parameters.

    Most of the tabs have settings that determine how the analysis should be performed.

2. If the **Peaks** or **Loudness** tab is selected, move the cursor to the position that you want to analyze.

    The **Peaks** and **Loudness** tabs report values for the position of the cursor.

3. Click **Analyze**.

Results of the Global Analysis

Depending on the analysis type, one or several values are returned for the analyzed audio.

For the **Pitch** and **Extra** analyses, only one value is returned. The other analysis types provide a number of positions in the file that indicate peaks, glitches, etc. These points are called hot points.

RELATED LINKS
Checking the Results of the Global Analysis on page 156

Checking the Results of the Global Analysis

The results of the global analysis are marked with hot points. You can browse through these points to see the results of the analysis.

PREREQUISITE

In the **Audio Editor**, select the **Analyze** tab, click **Global Analysis**, and perform the analysis.

PROCEDURE

1. In the **Global Analysis** dialog, click the tab that represents the values that you want to check.

2. Check the display for maximum/minimum values in the entire analyzed section.

3. Decide which of these values you want to check.

4. Click the value.

5. Check the **Number of Points** value at the bottom of the dialog.

    The value shows the number of positions that were detected by the analysis.

6. Use the scrollbar below the **Number of Points** value to browse between the detected positions.

    The edit cursor shows the position in the wave window.

7. To browse another property, click the corresponding tab, and then the value button.

    NOTE

    The result of the analysis is saved until you close the dialog or click **Analyze** again.

RELATED LINKS
Performing a Global Analysis on page 156
Creating Markers at Hot Points on page 157

Creating Markers at Hot Points

Creating markers at hot points simplifies browsing the results of the global analysis.

PREREQUISITE

In the **Audio Editor**, select the **Analyze** tab, click **Global Analysis**, and perform the analysis.

PROCEDURE

1. In the **Global Analysis** dialog, select the analysis type for which you want to create markers at hot points.

    You can add markers for only one channel at a time.
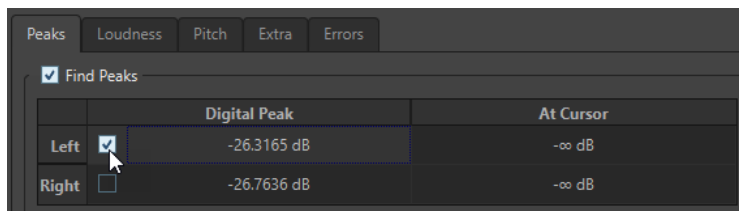
2. Click **Create Markers at Hot Points** at the bottom of the **Global Analysis** dialog.

    Temporary markers are added at all hot points on the corresponding channel.

RESULT

The markers are named using the following principle: "Hot point number (Channel)". For example, a marker at the third hot point in the left channel would be labeled "3 (L)".

RELATED LINKS
Performing a Global Analysis on page 156
Checking the Results of the Global Analysis on page 156
Focusing Hot Points on page 158

Focusing Hot Points

After a global analysis, you can focus the display on a specific hot point.

PREREQUISITE

In the **Audio Editor**, select the **Analyze** tab, click **Global Analysis**, and perform the analysis.

PROCEDURE

1. Use the **Number of Points** scrollbar to move the position indicator to the position in which you are.
2. Click **Focus**.

    The wave window zooms in on the selected point. The **Global Analysis** dialog is reduced to the bottom part.
3. To return to the full view of the **Global Analysis** dialog, click **Focus** again.

RELATED LINKS
Performing a Global Analysis on page 156
Creating Markers at Hot Points on page 157
Checking the Results of the Global Analysis on page 156

3D Frequency Analysis

Using the 3D Frequency Analysis, you can view an audio file in the frequency domain.

Use the 3D Frequency Analysis for the following:

●   Viewing the frequency spectrum distribution in a mix

●   Identifying which frequencies can be reduced or boosted as a basis for equalizing

●   Viewing parts of the frequency spectrum that are occupied by an ambience sound that you want to filter out

A wave display (time domain) informs you about the start and end of a sound in a file, but lacks information about the timbral contents of the file that a frequency graph (frequency domain) provides. The graph that is used in WaveLab Elements is often referred to as an FFT (Fast Fourier Transform) plot. If you select a stereo recording, a mix of the two channels is analyzed.

The wheel control allows you to view the frequency spectrum from different angles. For example, you can open several **3D Frequency Analysis** windows, each with a different perspective. This allows you to get a better view of an otherwise crowded graph.
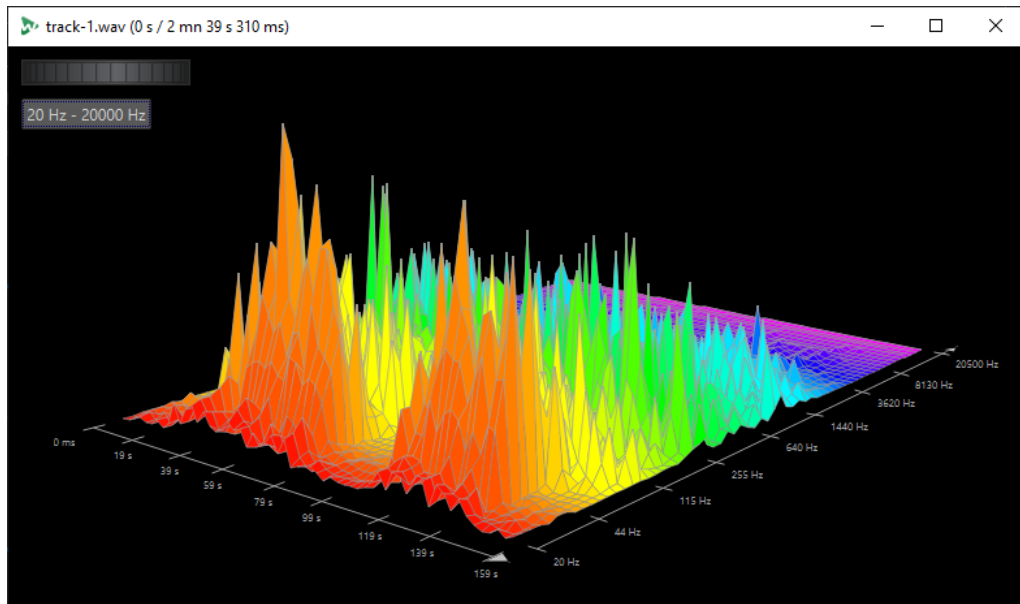
RELATED LINKS
Creating a Graph for 3D Frequency Analysis on page 159
3D Frequency Analysis Options Dialog on page 160

Creating a Graph for 3D Frequency Analysis

The length of the selected audio affects the accuracy of the analysis. For short selections, the result is more detailed. Consider making a separate analysis of the attack in which the most drastic variations occur.

PROCEDURE

1. In the wave window, select the section of the file that you want to analyze.

   If you make no selection, the whole audio file is analyzed.

2. In the **Audio Editor**, select the **View** tab.

3. In the **Analysis** section, click **3D Frequency Analysis**.

4. To edit the analysis parameters, click **3D Frequency Analysis Options**.
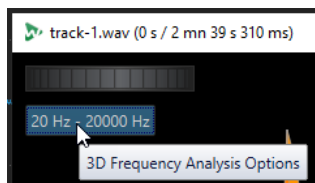
5. Adjust the parameters and click **OK**.

   The audio is re-analyzed.

RELATED LINKS
Edit Tab (Audio Editor) on page 110
3D Frequency Analysis Options Dialog on page 160

3D Frequency Analysis Options Dialog

In the options dialog of the **3D Frequency Analysis** dialog, you can define which frequency range is analyzed and modify the appearance of the graph for the 3D frequency analysis.

- In the **3D Frequency Analysis** dialog, click the **3D Frequency Analysis Options** button.
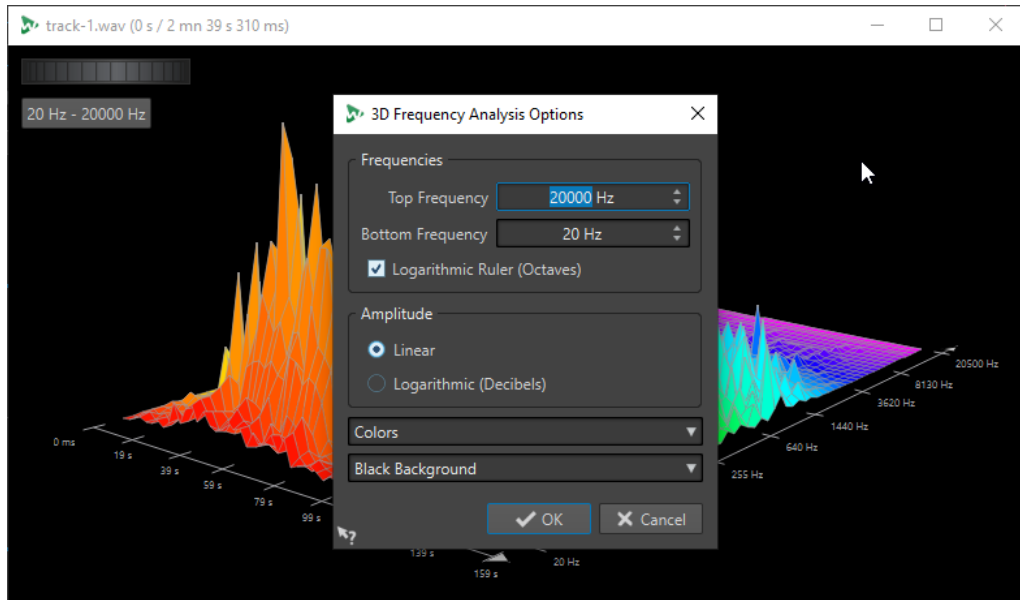
Top Frequency/Bottom Frequency

Specifies the highest/lowest frequency of the range.

Logarithmic Ruler (Octaves)

Divides the frequency ruler in equally spaced octaves.

Amplitude

Select whether you want the peaks to be proportional to their amplitude (**Linear**) or to their power (**Logarithmic Decibels**).

Colors

Defines the color scheme of the graph.

Background

Defines the background color.

RELATED LINKS
3D Frequency Analysis on page 158

Offline Processing

Offline processes are useful for a variety of editing purposes and creative effects, for example, if the computer is too slow for real-time processing or if the editing requires more than one pass.

After the processing, the audio file is permanently altered.

RELATED LINKS
Process Tab on page 161
Applying Processing on page 163

Process Tab

The **Process** tab provides access to the offline processing tools.

● In the **Audio Editor**, click **Process**.
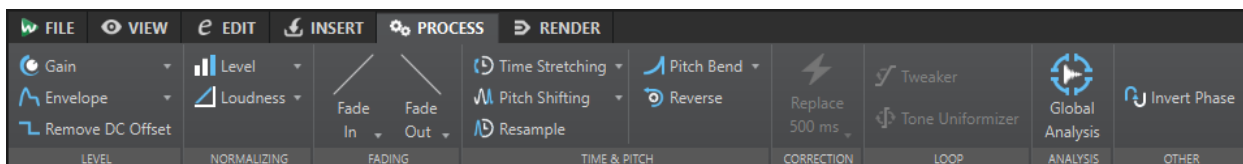
Level

Gain

Opens the **Gain** dialog where you can apply a gain to change the level of an audio file.

Envelope

Opens the **Envelope** dialog where you can create a level envelope which can be applied to a selected range or an entire audio file.

This is useful if you want to even out loud and quiet parts or create a sophisticated fade in/fade out, for example.

Remove DC Offset

DC offset in a file affects the loudness. **Remove DC Offset** sets the DC offset to zero.

Normalizing

Level

Opens the **Level Normalizer** dialog where you can change the peak level of an audio file.

Fading

Fade In/Fade Out

Allows you to apply a fade in or fade out. Right-click the button to open the **Curve** pop-up menu.

Curve

Allows you to select preset fade curves.

- **Linear** changes the level linearly.
- **Sinus (*)** changes the level according to a sine curve. When used in a crossfade, the loudness (RMS) remains constant during the transition.
- **Square-Root (*)** changes the level according to a square-root curve. When used in a crossfade, the loudness (RMS) remains constant during the transition.
- **Sinusoid** changes the level according to a sine curve.
- **Logarithmic** changes the level according to a logarithmic curve.
- **Exponential** changes the level according to an exponential curve.
- **Exponential+** changes the level according to a more pronounced exponential curve.

Time & Pitch

Time Stretching

Opens the **Time Stretching** dialog where you can change the duration of an audio selection.

Pitch Shifting

Opens the **Pitch Shifting** dialog where can change the pitch of your audio.

Resample

Opens the **Sample Rate** dialog where you can change the sample rate of your audio.

Pitch Bend

Opens the **Pitch Bend** dialog where you can gradually change the pitch of your audio using an envelope curve.

Reverse

Creates a backwards-tape effect.

Correction

In the **Correction** section, you can choose from the following error correction methods:

- **Short Resynthesis** is best suited for minor errors in your audio. WaveLab Elements analyzes the immediate surroundings of the error to find the most appropriate method of correction.
- **Smooth Pencil Line** is particularly suited for tiny clicks in your audio. This method corresponds to drawing an accurate line with a soft pencil. It replaces the corrupted sample with the pencil line.

Loop

Tweaker

Opens the **Loop Tweaker** dialog where you can adjust the loop start and end points, and crossfade the loop boundaries.

Tone Uniformizer

Opens the **Loop Tone Uniformizer** dialog where you can create loops from sounds that are not optimal for looping.

Analysis

Global Analysis

Opens the **Global Analysis** dialog where you can analyze peaks, loudness, pitch, DC offset, and errors in the audio file.

Other

Invert Phase

Turns the signal upside down.

Applying Processing

Processing can be applied to a selection or to a whole file. For some operations processing the entire file is necessary.

NOTE

If **Process Whole File If There Is No Selection** is activated in the **Editing** tab of the **Audio Files Preferences**, the whole file is automatically processed if no selection exists.

PROCEDURE

1. In the wave window, make a selection.

2. In the **Audio Editor**, select the **Process** tab.

3. Select the type of processing that you want to apply.

4. If a dialog opens, make the settings and click **Apply** to render the effect to the file.

RELATED LINKS

Gain Dialog

In this dialog, you can apply a gain to change the level of an audio file.

- To open the **Gain** dialog, select the **Process** tab in the **Audio Editor**, and click **Gain** in the **Level** section.
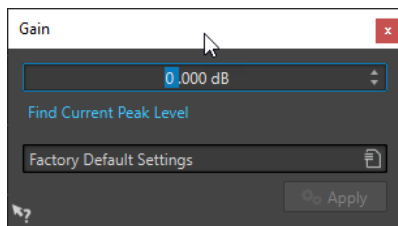
Click **Find Current Peak Level** to obtain a report on the peak level of the audio selection, or the whole file if there is no selection. This is useful if you want to calculate how much you can increase the overall gain of a file without clipping (exceeding 0 dB), for example.

This processor also lets you add clipping. Clipping happens when the gain is raised to a point where distortion is added. While this is normally not intended, mild clipping can add some punch, for example, to accentuate the attack of a drum sound.

Level Normalizer Dialog

In this dialog, you can change the peak level of an audio file.

- To open the **Level Normalizer** dialog, select the **Process** tab in the **Audio Editor**, and click **Level** in the **Normalizing** section.
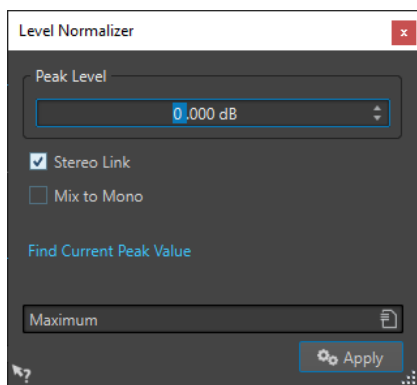
Peak Level

> Enter the peak level (in dB) that you want the audio selection to have.

Stereo Link

> Applies the gain to both channels.

Mix to Mono

> Mixes the left and the right channel. The resulting mono file has the specified peak level. This ensures a mix without clipping.

Find Current Peak Value

> Creates a report on the peak level of the current audio selection or the whole audio file if there is no selection.

Loudness Normalizer

You can use the **Loudness Normalizer** to achieve a specific loudness.

Increasing the loudness to a specific value can provoke clipping. To remedy this, a peak limiter (**Peak Master** plug-in) can be part of the process. The **Loudness Normalizer** raises the loudness and limits peaks in the signal at the same time if needed, to achieve the wanted loudness.

This process happens in several stages, first an analysis and then the final rendering.

RELATED LINKS
Loudness Normalizer Dialog on page 165

Loudness Normalizer Dialog

In this dialog, you can specify the loudness of a file.
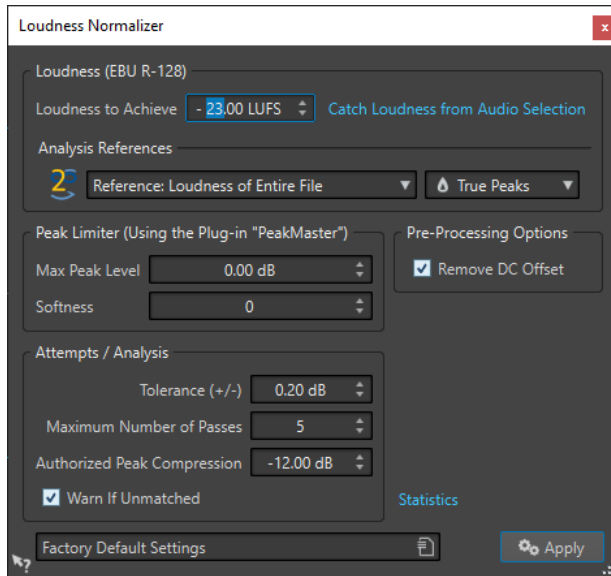
Loudness (EBU R-128)

Loudness to Achieve

If the loudness cannot be achieved with a simple positive gain change, a limiter must come into action to prevent clipping.

Here, specify the loudness that you want to achieve. The EBU R-128 recommendation for broadcast is -23 LUFS.

Specifying high values might require a gain outside the normal capabilities of the limiter, which can cause distortion.

It is recommended to use **Statistics** after specifying a loudness. This way, you know how much the gain needs to be raised and if peak limiting needs to be applied. If heavy limiting is necessary, this might degrade the audio quality. In such cases, a warning is shown after applying the process, allowing you to undo it.

Catch Loudness from Audio Selection

Sets **Loudness to Achieve** to the average loudness found in the audio file or audio selection.

Reference

This pop-up menu allows you to select a reference: the loudness of the entire file (EBU R-128 recommendation), the average loudest 3 second audio section (**Top of Loudness Range**), or the loudest 3 second audio section (**Maximum Short-Term Loudness**).

Peaks

In this pop-up menu, select whether WaveLab Elements should limit the sample values (**Digital Peaks**) or the analog reconstructed samples (**True Peaks**).

Peak Limiter

Max Peak Level

Specifies the maximum peak level of the resulting audio. The lower this value, the lower the loudness.

Softness

Affects how the peak master operates. A high setting maximizes the perceived loudness effect, but can result in a slight harshness of the sound.

Adjust this parameter to optimize the balance between sound quality and the effect that you want to achieve.

Pre-Processing Options

Remove DC Offset

DC offset in the file affects the loudness computation. **Remove DC Offset** sets the DC offset to zero. We recommend that you keep this option activated.

Attempts/Analysis

Tolerance (+/-)

If **Loudness to Achieve** requires peak limiting, this also reduces the loudness to some degree. This cannot be computed in advance and cannot be automatically applied to the gain change. Instead, several simulation passes are performed to find the best possible gain. This option allows you to define the precision of the result that you want to achieve.

Maximum Number of Passes

WaveLab Elements performs as many analysis passes as needed to match the precision that you want to achieve. Use this option to specify the maximum number of passes to be performed.

Authorized Peak Compression

As too much compression degrades the audio quality, you can specify a limit for the applied compression. The value can be set between -1 and -20 dB. Consider lowering the **Loudness to Achieve**, as this renders better results.

Warn If Unmatched

If this option is activated, you are warned if the normalizing process does not meet the specified loudness/precision.

Statistics

Opens a window that shows you information about the file to be processed. It shows any DC offset, the current loudness, the current peak level, and the required gain to achieve the specified loudness. Furthermore, you are informed if limiting is required.

RELATED LINKS

Envelope Dialog

In this dialog, you can create a level envelope which can be applied to a selected range or a whole audio file. This is useful if you want to even-out loud and quiet parts or create a sophisticated fade in or fade out, for example.

● To open the **Envelope** dialog, select the **Process** tab in the **Audio Editor**, and click **Envelope** in the **Level** section.
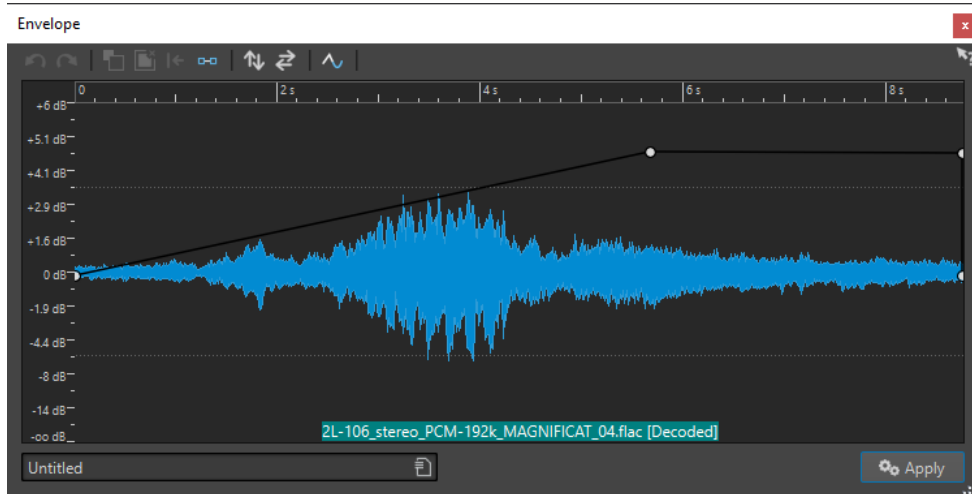
The dialog shows a waveform with an envelope curve (initially a straight line). A vertical ruler displays the level in dB, and the horizontal ruler displays the timeline.

The following options are available:

- **Undo the Last Operation**
- **Redo the Last Undone Operation**
- **Deselect the Envelope Points**
- **Delete the Selected Envelope Points**
- **Reset the Selected Envelope Points**
- **Reset the Whole Envelope**
- **Flip the Envelope Around the Horizontal Axis**
- **Reverse the Envelope Time Sequence**
- **Toggle the Envelope Smoothing**

Basic Envelope Operations

By adding points to the envelope curve, you can create an envelope curve that changes the volume of the material over time. When you point the mouse in the display or move a point, the current position and level change is shown in the field above the display.

- To add a point, double-click the envelope curve.
- To select a point, click it.
- To select several points, click and drag the selection rectangle or click them while pressing **Ctrl/Cmd** .
- To move a point, click and drag it. If more than one point is selected, all points are moved.
- To move the whole curve up or down, click the envelope curve, and drag up or down.
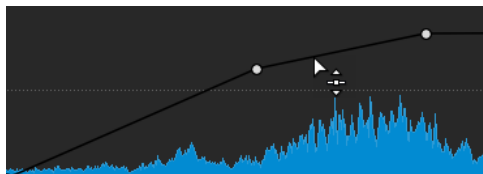
- To move the curve segments vertically, press **Ctrl/Cmd** , click the curve segment, and drag up or down.

- To move two points horizontally, press Shift , click the curve segment between two points, and drag left or right.
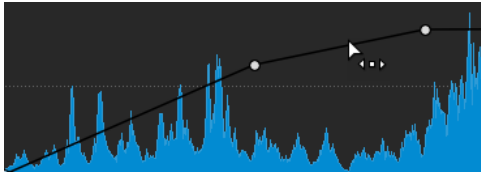
- To move two points vertically, press Ctrl/Cmd , click the curve segment between two points, and drag up or down.
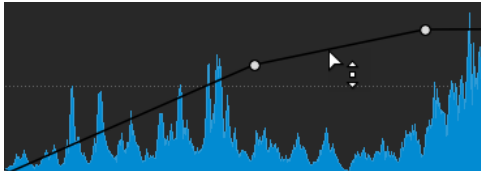
Fades in Audio Files

A fade in is a gradual increase in level and a fade out is a gradual decrease in level.

You can create fades by selecting an individual fading type for each fade in/fade out.

Creating a Fade In and Fade Out

PROCEDURE

1. In the wave window, make a selection.
2. In the **Audio Editor**, select the **Process** tab.
3. Depending whether you want to create a fade in or a fade out, select one of the following options in the **Fading** section:
   - To apply the default fade type, click the **Fade In** or **Fade Out** icon.
   - To select another fade type, click **Fade In** or **Fade Out** below the fade icon. From the pop-up menu, select the type of fade that you want to create.

Applying Easy Fades

The **Easy Fade** function allows you to quickly apply a default fade in or fade out to an audio file via shortcut.

The shape of the fade is governed by the **Fade In** and **Fade Out** settings in the **Fading** section of the **Process** tab.

PROCEDURE

1. In the **Audio Editor**, make one of the following selections:
   - From the start of the audio file to where you want the fade in to end.
   - From the position where you want the fade out to start to the end of the audio file.
2. Click Ctrl/Cmd - D .

Crossfades

A crossfade is a gradual fade between two sounds, where one is faded in and the other faded out. You can automatically create a crossfade when pasting an audio section into another.

Creating Crossfades

The material that you want to crossfade can either be in two different sections of the same audio file or in two different audio files.

PROCEDURE

1. In the wave window, select the section that you want to fade in.

2. Select the **Edit** tab.

3. In the **Clipboard** section, click **Copy**.

4. Select the section that you want to fade out.

   The length of this selection determines the length of the actual crossfade and is shown on the status bar. The section can be within the selected audio file or in another wave window. However, the selection must not be longer than the selection that you just copied.

5. Depending whether you want to create a fade in or a fade out, select one of the following options in the **Clipboard** section:

   ● To apply the default crossfade type, click the **Paste and Crossfade** icon.

   ● To select another crossfade type, click **Paste and Crossfade** below the crossfade icon. From the pop-up menu, select the type of crossfade that you want to create.

RESULT

The crossfade is created. Any material that originally appeared after the selection in the file into which you paste, is moved so that it now appears after the pasted material.

Any excess material in the copied selection appears after the fade at full level.

NOTE

If both files already have full level sections in the crossfade area (for example, if you have normalized both files), clipping and distortion might occur. If this happens, reduce the amplitude of both files by 3 dB to 6 dB and try again.

AFTER COMPLETING THIS TASK

Play back the file and adjust the crossfade if necessary.

RELATED LINKS
Paste and Crossfade Options on page 169

Paste and Crossfade Options

These options allow you to select a crossfade type for pasting.

● Select the **Edit** tab in the **Audio Editor**, and click **Paste and Crossfade** in the **Clipboard** section.

Linear (Equal Gain)

Level changes linearly.

Sinus (Equal Power)

Level changes according to a sine curve, the power of the mix remains constant.

Square-Root (Equal Power)

Level changes according to a square-root curve, the power of the mix remains constant.

Phase Inverting

Inverting the phase turns the signal upside down. The most common use for this function is to fix a stereo recording if one of the channels has been recorded out of phase with the other.

Inverting the Audio Phase

PROCEDURE

1. Optional: If you only want to invert the phase for a specific time range of the audio file, create a selection range in the wave window.

2. In the **Audio Editor**, select the **Process** tab.

3. In the **Other** section, click **Invert Phase**.

Reversing Audio

You can reverse an audio file or a part of an audio file as if playing a tape backwards.

PROCEDURE

1. Optional: If you only want to reverse a specific time range of the audio file, create a selection range in the wave window.

2. In the **Audio Editor**, select the **Process** tab.

3. In the **Time & Pitch** section, click **Reverse**.

DC Offset

DC offset means that there is a too large DC (direct current) component in the signal. This most often occurs due to mismatches between various types of recording equipment.

A DC offset is problematic for the following reasons:

- It affects the zero crossing position.
- Some processing options do not give optimal results when performed on files with a DC offset.

Removing DC Offset

PROCEDURE

1. In the **Audio Editor**, open the audio file that you want to check for DC offset and that you want to fix.

2. Select the **Process** tab.

3. In the **Level** section, click **Remove DC Offset**.

    A dialog opens, stating the amount of DC offset in the audio file. You can also create a selection range in the wave window and select this option to only show the DC offset in the selection range.

    > **NOTE**
    >
    > This function should be applied to whole files, because the problem is normally present throughout the entire recording.

4. Click **OK** to remove the DC offset.

Time Stretching

Time stretching is an operation that allows you to change the length of a recording without affecting its pitch.

With time stretching, you can make audio material longer or shorter. This function is most often used to match the duration of an audio section with other material. You select the material to be stretched and use the options in the **Time Stretching** dialog to find a stretch factor. You can specify the length or the tempo, according to what the situation requires.

> **NOTE**
>
> WaveLab Elements uses the ZPlane technology for high-quality time stretching.

RELATED LINKS
Time Stretching Dialog on page 171
Time Stretching Limitations on page 172

Time Stretching Dialog

In this dialog, you can change the duration of an audio selection, usually without changing its pitch. You can stretch a selection to a specified duration (in minutes, seconds, and milliseconds), tempo (in bpm), or stretch factor (as percentage).

●   To open the **Time Stretching** dialog, select the **Process** tab in the **Audio Editor** and click **Time Stretching** in the **Time & Pitch** section.
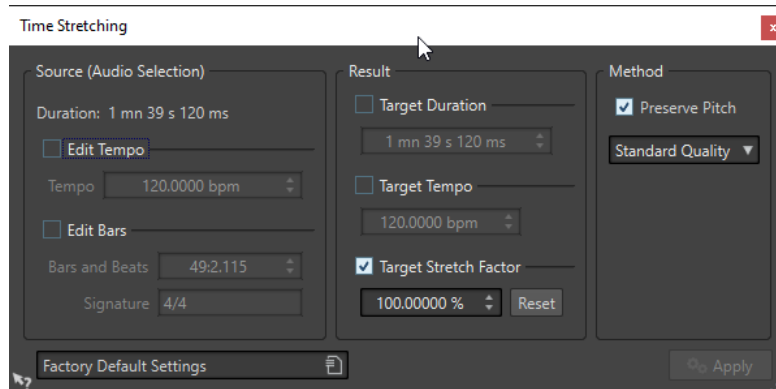
Source (Audio Selection)

Duration

If **Edit Tempo** is activated, you can change the tempo of the audio source. The number of bars and beats and the stretch factor is updated automatically.

If **Edit Bars** is activated, you can set the number of bars and beats and the signature for the audio source. The source tempo and the stretch factor is updated automatically.

Result

Target Duration

If this option is activated, the audio source changes its duration.

Target Tempo

If this option is activated, the audio source changes its tempo. For this to work, you must specify the original tempo or the number of bars and beats.

Target Stretch Factor

Indicates how much the audio duration changes. This parameter is automatically updated when you edit the other parameters, but you can also activate this option to edit it manually.

Reset

Resets the stretch factor to 100%, that is, no stretch.

Method

Preserve Pitch

If this option is activated, the pitch of the audio material is not affected when you apply time stretch. If this option is deactivated, the pitch changes proportionally with the time stretch ratio.

Accuracy pop-up menu

Allows you to select whether to favor duration accuracy or pitch accuracy when time stretching.

- **Favor Duration Accuracy** preserves the length of the original audio.

- **Favor Pitch Accuracy** can result in a slightly different audio length after pitch shifting.

RELATED LINKS
Time Stretching on page 171

Time Stretching Limitations

Time stretch is a complicated Digital Signal Processing (DSP) operation that always affects the sound quality to some extent.

- For speech, stretch factors within a ±30% range provide good results.

- For composite music, try to limit the range to ±10%.

- For sensitive material, like solo piano, try to limit the range to ±3%.

RELATED LINKS
Time Stretching on page 171

Pitch Shift

Pitch shift allows you to detect and to change the pitch of a sound, with or without affecting its length. This is useful for fixing an off-key vocal note in a live recording, or for tuning the pitch of a kick drum sample to fit a particular song, for example.

RELATED LINKS

Pitch Shifting Dialog

In this dialog, you can change the pitch of a sound.

- To open the **Pitch Shifting** dialog, select the **Process** tab in the **Audio Editor**, and click **Pitch Shifting** in the **Time & Pitch** section.
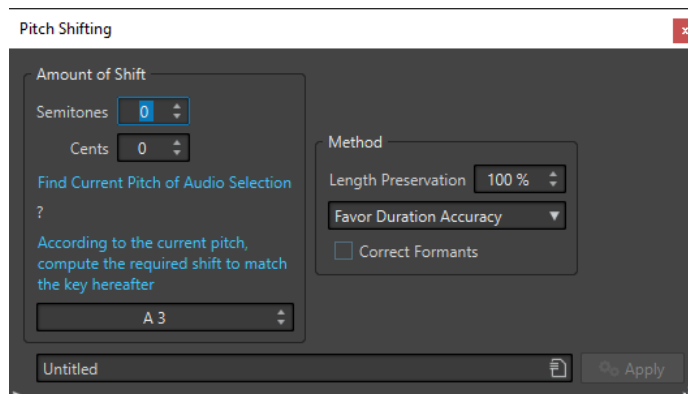
Pitch Shifting dialog for audio files

Amount of Shift

Semitones

Allows you to specify the amount of pitch change in semitones.

Cents

Allows you to specify the amount of pitch change in cents.

Find Current Pitch of Audio Selection

Analyzes the pitch of the selected audio and displays it below this button. This option is only available for audio files.

According to the current pitch, compute the required shift to match the key hereafter

Click to adjust **Amount of Shift** parameters automatically, based on the detected pitch and the pitch specified in the value field below this button. This option is only available for audio files.

Pitch field

Specifies the resulting pitch.

Method

Length Preservation

Specifies how the length of the selection is affected by the operation:

- A setting of 100 % means that the length of the audio remains unchanged.

- A setting of 0 % means that the program behaves like a tape recorder, when the speed of its tape is changed. For example, if you raise the pitch by one octave, the audio is half as long.

  For large transposition values, the lower this setting, the better the quality of the effect.

Accuracy pop-up menu

Allows you whether to favor duration accuracy or pitch accuracy when pitch shifting.

- If **Favor Duration Accuracy** is selected and the **Length Preservation** is set to 100 %, the resulting audio after pitch shifting is the same length as the source audio.

- If **Favor Pitch Accuracy** is selected, the resulting audio after pitch shifting might have a slightly different length than the source audio.

Correct Formants

If this option is activated, changing the pitch of vocal material gives a more realistic result. When processing non-vocal material, leave this option deactivated, because it uses a slightly slower processing algorithm.

NOTE

This algorithm might cause a noticeable increase in signal level.

RELATED LINKS
Pitch Shift on page 173

Pitch Bend

Pitch bend allows you to change the pitch of a sound over time.

This function can be used for creating the classic tape stop effect, or for blending the tempo/pitch of one track into another, for example.

In the **Pitch Bend** dialog, you can draw the envelope curve that you want the pitch to follow. The pitch offset is displayed on the vertical ruler of the envelope and the range of the envelope effects can be adjusted. Positive pitch values produce sounds with a higher pitch and a shorter length, negative values produce sounds with a lower pitch and a longer length.

RELATED LINKS
Pitch Bend Dialog on page 174

Pitch Bend Dialog

In this dialog, you can gradually change the pitch of a sound using an envelope curve.

- To open the **Pitch Bend** dialog, select the **Process** tab in the **Audio Editor**, and click **Pitch Bend** in the **Time & Pitch** section.
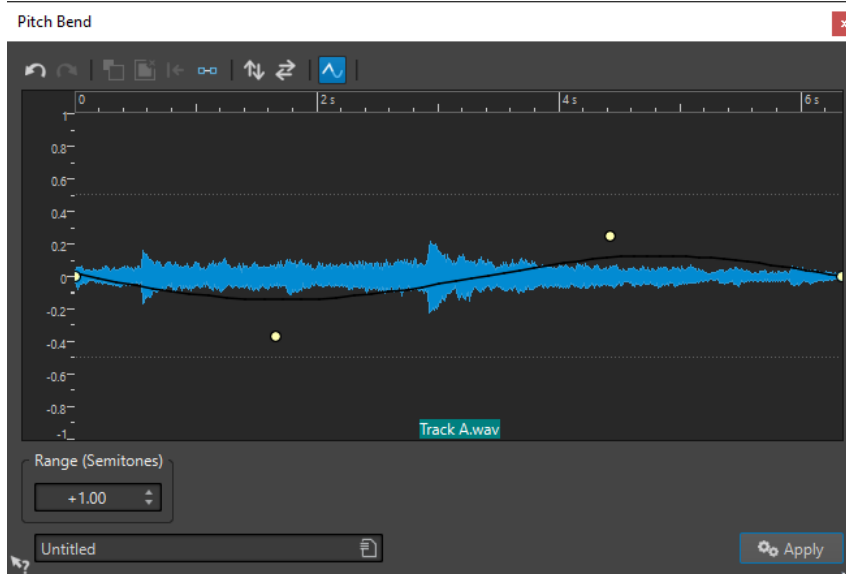
Pitch bend envelope

Allows you to edit the envelope curve to change the pitch of a sound. To add an envelope point, double-click the envelope curve. You can then drag the envelope points to customize the pitch bend envelope.

The following options to edit envelopes are available above the pitch bend envelope display:

- **Undo the Last Operation**
- **Redo the Last Undone Operation**
- **Deselect the Envelope Points**
- **Delete the Selected Envelope Points**
- **Reset the Selected Envelope Points**
- **Reset the Whole Envelope**
- **Flip the Envelope Around the Horizontal Axis**
- **Reverse the Envelope Time Sequence**
- **Toggle the Envelope Smoothing**

Range (Semitones)

Specifies the maximum range in semitones for the pitch change. When you change this value, this is indicated in the vertical ruler.

RELATED LINKS
Pitch Bend on page 174

Resample

You can change the sample rate of a recording. This is useful if the file that you want to use in an audio system was recorded at a sample rate that this system does not support.

NOTE

- Sample rate conversion from a low frequency upwards does not improve the sound quality. The high frequencies that were lost cannot be restored by a conversion.

- If you resample to a lower frequency, high frequency material is lost. Therefore, converting down and then up again leads to a degradation in sound quality.

NOTE

Using the **Resampler** plug-in in the quality mode **High** changes the sample rate results in the same quality as when using the **Resample** option in the **Audio Editor**. However, that is only the case if the sample rate in the **Sample Rate** dialog exists in the values of the **Resampler Sample Rate** pop-up menu. If you choose a custom sample rate, another algorithm is used, which results in a lower quality of what the **Resampler** can achieve.

RELATED LINKS
Converting a Sample Rate on page 176

Converting a Sample Rate

Resampling allows you to convert the sample rate of an audio file to another sample rate.

NOTE

Sample rate conversion is always applied to the entire file.

PROCEDURE

1. In the **Audio Editor**, select the **Process** tab.
2. In the **Time & Pitch** section, click **Resample**.
3. In the **Sample Rate** dialog, select a sample rate from the pop-up menu.
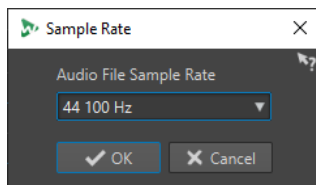
4. Click **OK**.

RELATED LINKS
Resample on page 175

Audio Montage

The audio montage is a multitrack non-destructive editing environment that allows you to arrange, edit, play back, and record audio clips.

Non-destructive means that when you delete or change a part of an audio file, the audio is not deleted or permanently changed. Instead, a set of pointers keeps track of all the edits, so that these can be readily reversed.

The non-destructive editing functions include both track- and clip-based effects, volume and pan automation, as well as wide-ranging fade and crossfade functions.

The audio montage is a great tool for audio CD creation, mastering, multimedia work, radio spot production, etc.

Basic Terminology

Audio montages can contain up to 3 stereo or mono audio tracks and a video track. You can use them to structure your work graphically.

On an audio track, you can place any number of clips. Clips are containers for the audio, and include a number of settings and functions such as volume and pan curves, fades, etc.

A clip contains a reference to a source audio file on your hard disk, as well as start and end positions in the file, which means that clips can play back sections of the source audio files. Any number of clips can reference the same source file.

RELATED LINKS
Montage Window on page 177
Creating Audio Montages on page 192
Assembling the Audio Montage on page 198
Clip Editing on page 210

Montage Window

The montage window is where you assemble your audio montage. This is where you view, play back, and edit audio montages.

The montage window gives you a graphical representation of the tracks and clips.
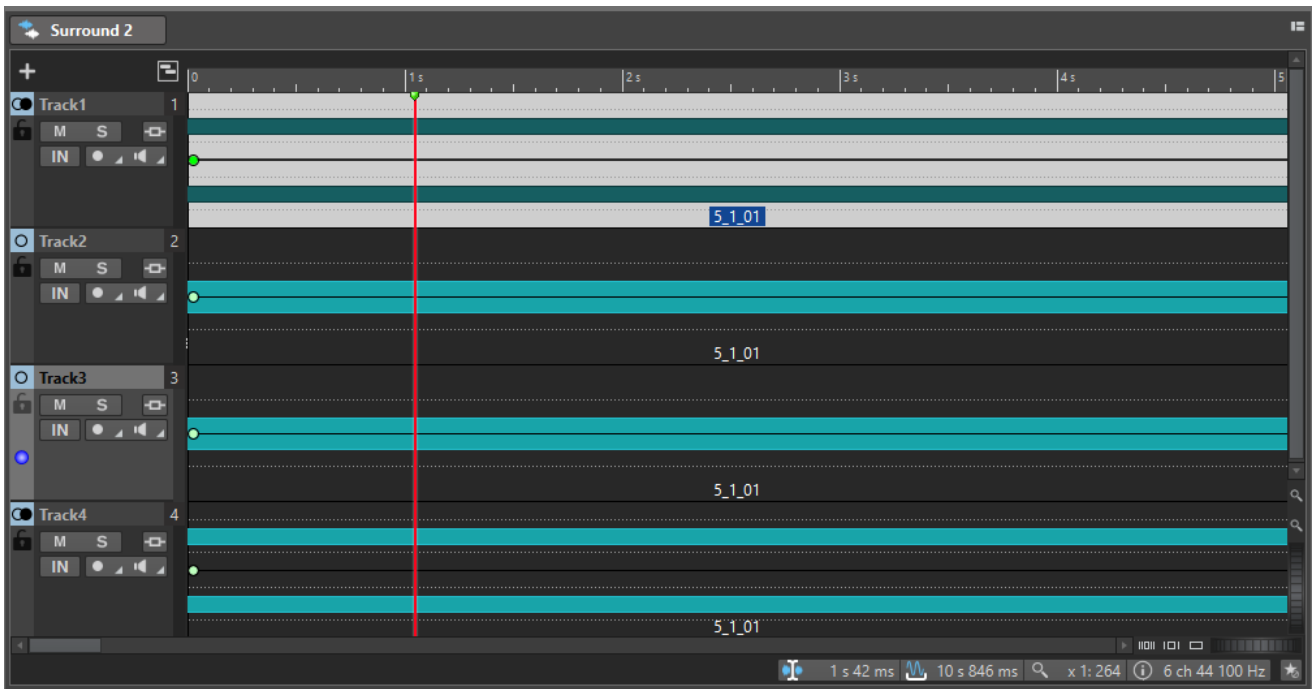
RELATED LINKS

Track Control Area

The track control area offers several track settings and options, for example, rearranging, muting, soloing, and routing tracks. Each track type has dedicated controls.

You can scroll through the tracks and resize them.

The track control area for mono and stereo tracks

The following options are available at the top of the track control area:

Add Track

Allows you to add a track to the audio montage.

Navigator

Opens a panel that displays an overview of the entire audio montage and allows you to quickly navigate in it.

To change the size of the **Navigator** panel, right-click the panel and select **Small Navigator**, **Medium Navigator**, or **Large Navigator**.
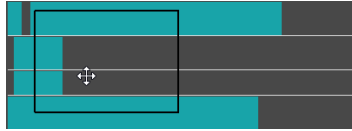
Track Control Area for Stereo and Mono Tracks

The track control area for stereo and mono tracks allows you, for example, to mute and solo tracks, add track effects, specify routing options, monitor the input signal, and record enable tracks.

Options

The track control area for mono and stereo tracks

Track Control Area Options

Track Name

Allows you to change the track name. Double-click the track name to open the **Track Name** dialog where you can enter a name for the track.

Lock

Disables all editing on the track.

Mute

Mutes the track.

Solo

Solos the track.

Effects

Opens the **Effects** pop-up menu where you can select effects for the track. A highlighted icon indicates that a track has track effects.

Input Bus/Channel Output Routing

Allows you to select the **Input Bus**, the **Channel Output Routing**, and the **Track Routing** dialog. When you hover over the button, a tooltip displays the selected routing options.

Audio Input

Allows you to select the audio input for recording.

Record

To be able to record, you must record enable the corresponding tracks. If you click the arrow, the following options are available:

File Properties for Recording opens a dialog that allows you to specify the name, location, and bit resolution of the audio file that you want to record.

If **Stop When Record Position Reaches Last Marker** is activated, recording stops when the record position reaches the last visible marker of the montage. Hidden markers are not taken into account. You can create and move the last marker during recording. This option is global to all audio montages.

If **Stop When Record Position Reaches Next Marker** is activated, recording stops when the record position reaches the next visible marker of the montage. Hidden markers are not taken into account. This option is global to all audio montages.

Ducker On/Off

Allows you to activate or deactivate ducking. You can then select the voice modulator track and make settings.

Source

Opens the **Modulator Tracks** menu that allows you to select the track that you want to use for ducking.

Ducker Settings

Opens the **Ducker** plug-in that allows you to edit ducking settings to fine tune the ducking effect.

Change Track Height of All Tracks

The lower left area of the track control area allows you to change the track height of all tracks simultaneously. Click and drag to change the track height.

Change Track Height of Active Track

The lower middle area of the track control area allows you to change the track height of the active track. Click and drag to change the track height.

Change Track Height of Active Track and Track Below

The lower right area of the track control area allows you to change the track height of the active track and the track below. Click and drag to change the track height.

Track peak meter

The track peak meter shows the volume level for audio tracks. It is located on the right side of the track control area.

Track Pop-up Menu

This pop-up menu contains all track-related options.

● To open the **Track** pop-up menu, right-click in the track control area.

Add Track

Adds a track below the active track.

Split into Left/Right Mono Tracks

Converts the stereo track into two mono tracks that represent the left and right channels of a stereo track. This does not alter the audio material.

Remove Track

Removes the active track.

Show Ducking Controls

Activates the ducking controls in the track control area.

Track Settings Menu

- To open the **Track Settings** menu, click the down arrow in the lower middle area of the track control area.
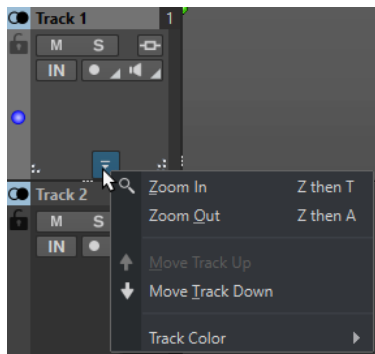
Zoom In

Shows the active track in the full available height.

Zoom Out

Shows as many tracks as possible.

Move Track Up/Move Track Down

Moves the active track up or down.

Track Color

Opens a submenu, where you can select a color for the active track.

RELATED LINKS
Additional Ways of Adding Effects on page 241
Track Ducking on page 227
Track Peak Meter on page 183
Track Control Area on page 178
Track Routing Dialog on page 208

Track Control Area for Video Tracks

The track control area for video tracks allows you, for example, to activate/deactivate thumbnails and show/hide the frame numbers of the video. Below the video track, the corresponding audio track has the same options as mono and stereo tracks.

Options
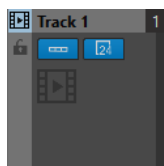
Track Name

Allows you to change the track name. Double-click the track name to open the **Track Name** dialog where you can enter a name for the track.

Lock

Disables all editing on the track.

Show Thumbnails

Allows you to activate/deactivate the thumbnails of the video track.

Show Frame Numbers

Allows you to show each thumbnail with the corresponding video frame number.

Change Track Height of All Tracks

The lower left area of the track control area allows you to change the track height of all tracks simultaneously. Click and drag to change the track height.

Change Track Height of Active Track

The lower middle area of the track control area allows you to change the track height of the active track. Click and drag to change the track height.

Change Track Height of Active Track and Track Below

The lower right area of the track control area allows you to change the track height of the active track and the track below. Click and drag to change the track height.

Track Pop-up Menu

This pop-up menu contains all track-related options.

- To open the **Track** pop-up menu, right-click in the track control area.

Add Track

Allows you to add a track below the active track.

Remove Track

Deletes the active track.

Track Settings Menu

- To open the **Track Settings** menu, click the down arrow in the lower middle area of the track control area.
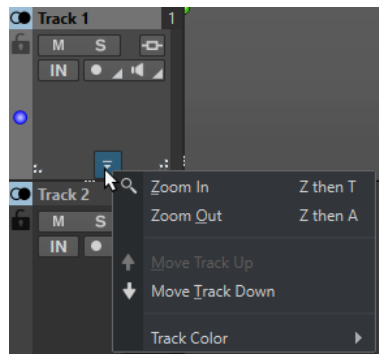
Zoom In

Shows the active track in the full available height.

Zoom Out

Shows as many tracks as possible.

Move Track Up/Move Track Down

Moves the active track up or down.

RELATED LINKS
Track Control Area for Stereo and Mono Tracks on page 179
Track Control Area on page 178

Track Peak Meter

The track peak meter shows the volume level for the left channel and the right channel of stereo tracks. It is located on the right side of the track control area in the **Audio Montage** window.

The track peak meter provides an overview of which tracks are playing back audio at what approximate level. The left bar shows the volume level of the left stereo channel and the right bar shows the volume level of the right stereo channel.
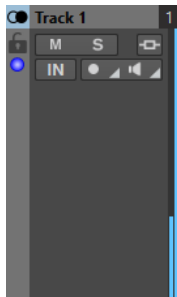
RELATED LINKS
Track Control Area for Stereo and Mono Tracks on page 179

Audio Montage Tabs

The tabs in the **Audio Montage** window give you access to the tools and options you need for editing audio montages. For example, you can edit the envelope curves and fades in clips, make zoom settings, analyze the audio, and render the audio montage.

View Tab (Audio Montage)

● In the **Audio Montage**, click **View**.
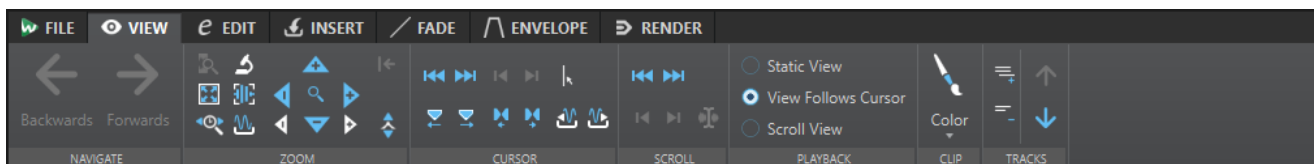
Navigate

Backwards/Forwards

Navigates to the previous/next cursor position, zoom factor, and selection range.

Zoom

Zoom

Activates the **Zoom** tool that allows you to define a time range that is zoomed in.

Time

Opens a pop-up menu that allows you to adjust the zoom to display the selected time range. **Zoom in 1:1** zooms in so that one pixel on the screen represents one sample.

To edit the zoom factor, click **Edit Zoom Factor**. This opens the **Zoom Factor** dialog, where you can edit the following settings:

● **Set Time Range** allows you to specify the time range that you want to display.

- **Samples per Screen Point** allows you to specify how many audio samples are summarized in each screen point.
- **Screen Points per Sample** allows you to specify how many screen points are used to represent a single audio sample.

Zoom Selection

Zooms the window so that the current selection occupies the entire montage window.

Microscope

Zooms in as far as possible.

View All

Zooms out as far as possible.

Display Whole Clip

Adjusts the view to display the active clip.

Zoom in Audio (10x)/Zoom out Audio (10x)

Zooms in/out in big steps.

Zoom in Audio/Zoom out Audio

Zooms in/out in small steps.

Zoom in Vertically/Zoom out Vertically

Zooms in/out to show waveforms with a lower/higher level.

Level

Adjusts the zoom to only display samples below the selected dB value.

Reset Zoom to 0 dB

Adjusts the zoom to display audio levels up to 0 dB.

Cursor

Move Cursor to Start of File/Move Cursor to End of File

Moves the cursor to the start/end of the file.

Previous Marker/Next Marker

Moves the cursor to the previous/next marker.

Start of Selection/End of Selection

Moves the cursor to the start/end of the selected time range.

Previous Region Edge/Next Region Edge

Moves the cursor to the previous/next region edge.

Edit Cursor Position

Opens the **Cursor Position** dialog where you can edit the cursor position.

Previous Clip Edge/Next Clip Edge

Moves the cursor to the previous/next clip edge.

Scroll

Start/End

Displays the start/end of the audio without moving the cursor.

Start of Selection/End of Selection

Displays the start/end of the audio selection without moving the cursor.

Cursor

Displays the cursor position.

Playback

Static View

Deactivates scrolling.

View Follows Cursor

Automatically scrolls the view to keep the playback cursor visible.

Scroll View

Automatically scrolls the view to keep the playback cursor centered.

Clip

Color

Allows you to apply a color to the active clip.

Tracks

Display More Tracks/Display Fewer Tracks

Allows you to change the number of tracks that are displayed in the montage window.

Focus on Previous Track/Focus on Next Track

Sets the focus on the previous/next track.

RELATED LINKS
Audio Montage Tabs on page 183

Edit Tab (Audio Montage)

● In the **Audio Montage**, click **Edit**.
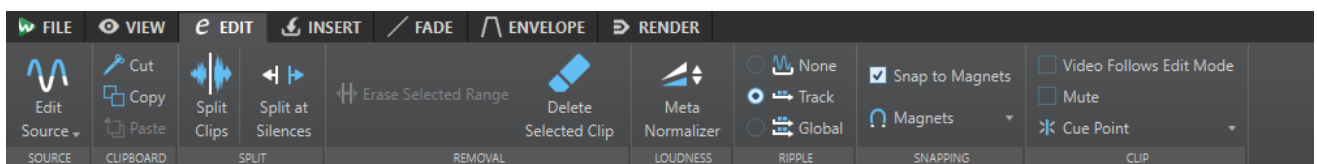
Source

Edit Source

Opens the source audio file of the clip in the **Audio Editor**.

Edit Cubase Project

Opens the Cubase project relating to the clip.

Clipboard

Cut

Cuts the selected audio range to the clipboard.

Copy

Copies the active clip or the selected audio range to the clipboard.

Paste

Pastes the clipboard content.

Split

Split at Silences

Splits the files so that each non-silent section becomes a separate region. If you select this option, you can specify the minimum region duration, the minimum duration of a silent section, and the signal level that should be considered as silence.

Removal

Delete Selected Clip/Delete Selected Range

Deletes the part of the clip that lies inside the selection range on the active track and moves the right section of the clip to the left to fill the gap.

If there is no selection range, the selected clips are deleted.

Ripple

None

Deactivates the auto-shift function.

Track

If this option is activated and you move a clip horizontally, all clips on the active track that are located to the right of the edited clip are also moved. This option also applies when moving or resizing clips, and when inserting or pasting more than one clip at the same time.

Global

If this option is activated and you move a clip horizontally, all clips on all tracks that are located to the right of the edited clip are also moved. This option is taken into account when moving or resizing clips, and when inserting or pasting more than one clip at the same time.

Snapping

Snap to Magnets

If this option is activated, moved elements such as clip edges, time selection edges, cursor, and markers snap to the magnets that are activated on the **Magnets** pop-up menu.

Magnets

This pop-up menu allows you to select which items should be magnetic.

Clip

Video Follows Edit Mode

If this option is activated, the video in the **Video** window automatically follows each edit that you make. This allows you to instantly see where in the video your edit is taking place.

Mute

Mutes the active clip.

Cue Point

This pop-up menu allows you to make cue point settings.

- **Set at Cursor** sets the cue point to a fixed position from the start of the clip.
- **Set at Default Gap Position** sets the cue point 2 seconds before the start of the clip.
- **Follows Fade In End Point** sets the cue point to the fade in end point.
- **Follows Fade Out Start Point** sets the cue point to the fade out start point.
- If **Custom Cue End** is activated, you can set the end cue point at a custom position from the end of the clip. This option allows you to edit the gap individually for each clip.

  If this option is deactivated, a 2 seconds default gap is used.
- **End Offset** opens the **End Cue Point Offset** dialog that allows you to set the end cue point at a custom position from the end of the clip.

RELATED LINKS
Editing Source Files of Clips on page 221
Clips and Cue Points on page 220

Insert Tab (Audio Montage)

- In the **Audio Montage**, click **Insert**.

Markers

Marker Name

Allows you to enter the name of the start marker. If nothing is entered, a generic name is used.

To edit the default names, open the **Markers** window, and select **Functions** > **Default Marker Names**.

Different Name for End Marker

If this option is activated, you can enter a different name for the end marker in the **End Marker Name** field.

If this option is deactivated, the name of the start marker is also used for the end marker.

Create/Name Marker

The **Create/Name Marker** button in the lower right corner of the **Markers** section opens the **Create Marker** dialog. This allows you to create markers and marker pairs at the edit cursor position.

Import

Audio Files

Allows you to select one or more audio files to insert at the edit cursor position on the active track.

Video File

Allows you to select a video file to insert at the edit cursor position on the video track. If the audio montage has no video track, a video track is created.

Fade Tab (Audio Montage)

- In the **Audio Montage**, click **Fade**.
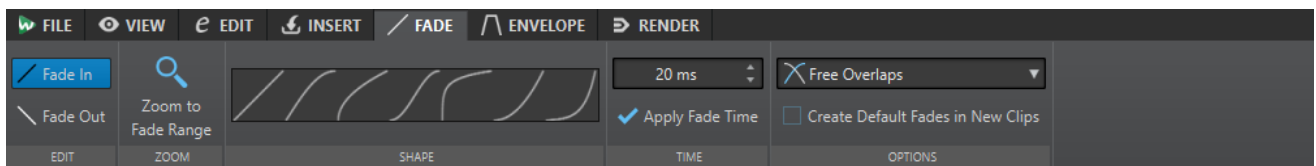
Edit

Fade In/Fade Out

Allows you to switch between the fade in and the fade out settings.

Zoom

Zoom to Fade Range

Adjusts the view to display the fade in/fade out part of the active clip.

Shape

Curve

Allows you to select preset fade curves.

- **Linear** changes the level linearly.
- **Sinus (*)** changes the level according to a sine curve. When used in a crossfade, the loudness (RMS) remains constant during the transition.
- **Square-Root (*)** changes the level according to a square-root curve. When used in a crossfade, the loudness (RMS) remains constant during the transition.
- **Sinusoid** changes the level according to a sine curve.
- **Logarithmic** changes the level according to a logarithmic curve.
- **Exponential** changes the level according to an exponential curve.
- **Exponential+** changes the level according to a more pronounced exponential curve.

Time

Fade Time

Allows you to specify a fade in/fade out time for the clip.

Apply Fade Time

Applies the specified clip fade in/fade out time.

Options

Overlaps

This pop-up menu allows you to set the automatic crossfading behavior.

- If **No Automatic Crossfading** is activated, no automatic crossfading is performed when clips overlap.

- If **Free Overlaps** is activated, automatic crossfades are created when a clip overlaps another clip on the same track. The length of the overlap determines the length of the crossfade.

Create Default Fades in New Clips

If this option is activated, all new clips get the default fade in and fade out shape and length. For clips that are created by splitting a clip, only the default fade time is used.

RELATED LINKS
Audio Montage Tabs on page 183

Envelope Tab (Audio Montage)

- In the **Audio Montage**, click **Envelope**.
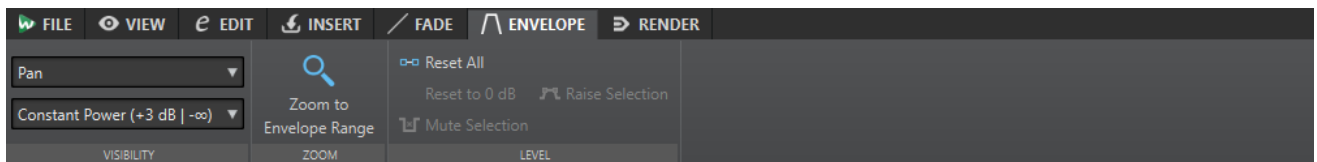
Selector

Envelope Type

Sets the type of the envelope. Depending on the selected type, different options are available. The following options are available:

- **Hide All** hides all envelopes.
- **Volume/Fades** only displays the volume/fades envelope.
- **Pan** only display the pan envelope. In the menu below, you can select a pan law.

Pan Law

Lets you select a pan law. This option is only available if the **Pan** envelope type is selected. The following pan laws are available:

- **Channel Damp (0 dB/Mute)**
- **Constant Power (+3 dB/Mute)**
- **Channel Boost (+4.5 dB/Mute)**
- **Channel Boost (+6 dB/Mute)**

Zoom

Zoom to Envelope Range

Adjusts the view to display the active envelope of the active clip.

Level

Reset All

Resets the envelope to its neutral form.

Reset to 0 dB

Replaces the segments between the fade in and fade out points with a single neutral segment.

Ducking

Opens the **Ducking Settings** dialog. This dialog allows you to create ducking effects between clips on two adjacent tracks where the level or send effect of one clip is modified every time that clips are present on the other track.

Mute Selection

Adds level envelope points and draws a curve to mute the selection by lowering the level to zero with default 20 ms fall and rise times.

Raise Selection

Adds level envelope points and draws a curve to raise the audio level of the selection with 20 ms fall and rise times. You can drag the created segment up and down to adjust the level.

RELATED LINKS
Envelopes for Clips on page 221
Audio Montage Tabs on page 183
Pan Laws on page 226

Render Tab (Audio Montage)

The **Render** tab allows you to mix down audio montages to audio files.

● In the **Audio Montage**, click **Render**.
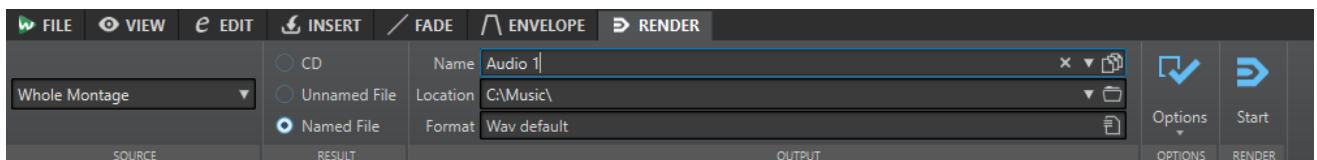
Source

Source pop-up menu

The **Source** pop-up menu allows you to select which part of the audio montage you want to process. The following options are available:

Whole Montage

Processes and renders the whole audio range.

Active Track

Processes and renders the active track from the start of the first clip until the end of the last clip. Muted clips are not rendered.

Specific Marked Region

Processes and renders a specific audio range to an independent file.

Specify the region to process on the pop-up menu.

Result

CD

Allows you to write a CD from the audio montage.

Unnamed File

If this option is activated, a temporary untitled file is rendered.

Named File

If this option is activated, you can specify a name for the rendered file.

Output

Name

Allows you to enter a name for the rendered file. Clicking the arrow icon opens a pop-up menu that offers you several naming options.

Location

Allows you to select a destination folder for the rendered files.

Format

Opens a pop-up menu where you can select a file format.

Options

Depending on the selected source, different options are available.

Bypass Master Section

If this option is activated, the plug-ins and gain of the **Master Section** are bypassed when rendering.

Add Reverb Tail

If this option is activated, the audio tail that is produced by effects such as reverb is included in the rendered file.

Some plug-ins do not transfer information on the tail duration to WaveLab Elements. In this case, this option has no effect. For such plug-ins, you can add the **Silence** plug-in to add extra samples at the end of the file.

Copy Markers

If this option is activated, the markers that are included in the range to process are copied to the rendered file.

Open Resulting Audio File

If this option is activated, every rendered file is opened in a new window.

Bypass Master Section on Resulting Audio File

If this option is activated, playback of the resulting audio file bypasses the entire **Master Section**. This setting can be toggled by clicking the button at the bottom right of the wave window or montage window.

NOTE

It is recommended to activate this option, because this way, you do not monitor new files through the effects that have already been applied to them.

Render

Start

Starts the rendering process.

RELATED LINKS
Audio Montage Tabs on page 183
Render Tab for the Master Section on page 280

Signal Path in the Audio Montage

The audio signal passes through the various sections of WaveLab Elements in a certain way.

1. The audio samples are read.

2. Clip envelope

3. Clip effects

4. Clip pan

5. Individual clip gain (**CD** window)

6. Clips are mixed into the track slot (for example, overlapping clips).

7. Track effects

8. Track level settings

9. Each track is mixed into a stereo bus.

10. The stereo channel is processed through the plug-ins of the montage output.

11. The stereo bus is sent to the **Master Section** input.

Signal Path in the Master Section

1. Channels/Sample rate can change at each plug-in slot.

2. **Master Section** meters

3. **Final Effect/Dithering** pane in the **Master Section**

4. Independent meters

5. Playback or file format rendering

Creating Audio Montages

You can create new, empty audio montages with custom audio montage properties.

PROCEDURE

1. Select **File** > **New**.

2. Select **Audio Montage** > **Custom**.

3. Specify the sample rate of the audio montage.

4. Click **Create**.

RESULT

The audio montage is created.

Creating Audio Montages from an Audio File

You can create an audio montage from an audio file or from a time selection in an audio file.

PROCEDURE

1. In the **Audio Editor**, open the audio file from which you want to create a new audio montage.

2. Optional: If you want to open a specific part of the audio file in a new audio montage, make a time selection in the audio file.

3. Right-click the file tab of the audio file.

4. Select **Create Audio Montage** > **From Current Audio File**.

5. In the **Create Audio Montage from Audio File** dialog, do one of the following:

   - To open the audio file in a new audio montage, select **Whole File**.

   - To open the time selection that you have made in the audio file in a new audio montage, select **Current Time Selection**.

6. Optional: Do one of the following:

   - To import the markers of the audio file into the new audio montage, activate **Import Markers**.

   - To split the audio file at the generic region markers, activate **Split at Generic Region Markers**.

7. Click **OK**.

RESULT

The audio file opens in a new audio montage.

Create Audio Montage from Audio File Dialog

In this dialog, you can specify whether you want to open the audio file or a time selection inside an audio file as a new audio montage. You can also specify whether you want to import markers into the new audio montage and split at certain markers.

To open the **Create Audio Montage from Audio File** dialog, do one of the following:

- Right-click the file tab of an audio file, and select **Create Audio Montage** > **From Current Audio File**.

- Open an audio file in the **Audio Editor**, select **File** > **New** > **From Current File**, select **From Current Audio File**, and click **Create**.
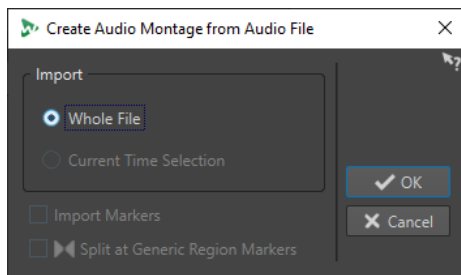
Whole File

> If this option is activated, the audio file opens in a new audio montage.

Current Time Selection

> If this option is activated, the time selection that you have made in the audio file opens in a new audio montage.

Import Markers

> If this option is activated, the markers inside the audio file are imported into the new audio montage.

Split at Generic Region Markers

> If this option is activated and the audio file contains generic region markers, the audio file is split at the marker positions when it is imported into a new audio montage. Audio outside the marker boundaries is removed.

RELATED LINKS
Creating Audio Montages from an Audio File on page 193

Alternative Ways of Creating New Audio Montages

There are several ways to create a new audio montage.

- Import audio CD tracks to an audio montage
- Convert wave files to an audio montage
- Duplicate audio montages
- Press **Ctrl**/**Opt** and drag a montage tab on the tab bar

RELATED LINKS
Audio Montage Duplicates on page 194

Audio Montage Duplicates

You can duplicate audio montages in various ways. This allows you to quickly create new audio montages using the same properties and audio files as previously created audio montages.

The following variants of audio montage duplicates are available:

Empty (With Same Properties)

> Creates a new audio montage with the channel settings and sample rate of the original audio montage, without any clips.

Exact Duplicate (Using the Same Audio Files)

> Creates an exact duplicate of the original audio montage and lets the new clips reference to the original audio files. The duplicated audio montage uses the channel settings and sample rate of the original audio montage.

This is useful if you want to create several versions of the audio montage, for example, to experiment with variations. However, any processing or editing that you apply to the actual audio files are reflected in all audio montages.

You can also press `Ctrl/Cmd`, drag a tab, and drop it on the tab bar to create an exact duplicate of an audio montage.

RELATED LINKS
Duplicating Audio Montages on page 195

Duplicating Audio Montages

PROCEDURE

1. Open the audio montage that you want to duplicate.
2. In the **Audio Montage** window, select the **File** tab.
3. Select **New** > **Audio Montage** > **From Current File**.
4. In the **From Current Audio Montage** section, select one of the following:
   - **Empty (With Same Properties)**
   - **Exact Duplicate (Using the Same Audio Files)**
5. Click **Create**.

RESULT
A duplicate of the audio montage opens in a new tab.

RELATED LINKS
Audio Montage Duplicates on page 194

Audio Montage Properties

In the **Audio Montage Properties**, you can define the channel configuration (mono, stereo, surround, Ambisonics) and the sample rate of the audio montage.

To open the sample rate settings for the selected audio montage, do one of the following:

- Select the **File** tab and click **Info**.
- Click the **Audio Montage Properties** button at the bottom right of the montage window. This open the **Audio Montage Properties** dialog.

In the **Audio Montage Properties**, you can specify the following settings for the selected audio montage:

Mode

Lets you select the following channel modes for the audio montage.

- **Mono**
- **Stereo**
- **Surround**
- **Ambisonics**

Channels

Lets you define the number of audio channels and their configuration at the output of the audio montage. This is only available in **Surround** and **Ambisonics** mode.

Sample Rate

Lets you select the sample rate for the audio montage.

Changing the Sample Rate of Audio Montages

You can change the channel configuration of audio montages in the **Sample Rate** dialog.

PROCEDURE

1. At the bottom right of the montage window, click the **Audio Montage Properties** button.

2. In the **Sample Rate** dialog, select a new sample rate.

3. Click **OK**.

RELATED LINKS
[Audio Montage Properties](#) on page 195

Import Options for Audio Montages

You can import audio files, video files, and Audio CD tracks into your audio montage.

The following import options are available via the **Import** section on the **Insert** tab of the **Audio Montage** window:

● To import audio files, click **Audio Files** and select the audio files that you want to import at the edit cursor position on the active track.

If you import a single audio file, the **Paste** pop-up menu opens. Here, you can specify how the clip should be inserted, whether existing clips should be affected, etc.

If you import multiple audio files, the **Insert Audio Files** dialog opens. Here, you can specify where to insert the files.

● To import video files, click **Video Files** and select the video file that you want to import at the edit cursor position on the video track. If no video track is available, a video track is created.

To access the following import options, select **File** > **Import**.

● To import audio files, click **Audio File to Montage**, select the audio files that you want to import, and click **Import**.

● To open audio files that have an unknown format, click **Unknown Audio**. Via the **Special File Format** dialog, you can specify how to interpret the format of the audio file that you want to open.

● To import CD tracks from an audio CD, click **Audio CD**. Via the **Import Audio CD** dialog, browse for the audio CD tracks to extract.

RELATED LINKS
[Mismatched Sample Rates When Inserting Audio Files](#) on page 205
[Special File Format Dialog](#) on page 134

Broken Audio File References

An audio montage consists of references to one or multiple audio files. These references can be broken if you move audio files to another location on your hard disk, for example. WaveLab

Elements detects broken references and allows you to specify new file locations or replace the missing audio file with another audio file.

RELATED LINKS
Fixing Broken Audio File References on page 197
Missing Files Dialog on page 197

Fixing Broken Audio File References

When you open an audio montage that contains broken audio file references, the **Missing Files** dialog opens automatically.

PROCEDURE

1. In the **Missing Files** dialog, select the missing audio file references that you want to fix.

2. In the **Where to Search** field, specify the file location of the new audio file reference.

3. Optional: Activate **Search Sub-Folders** to include subfolders in your search.

4. Do one of the following:

   - To let WaveLab Elements automatically search for audio files with the same name as the missing files, click **Find Files with the Same Name**.

     In the **Select a Replacement** field, select the new audio file references and click **OK**.

   - To select audio files to replace the missing files, click **Replace Selected Files With**, select the new files, and click **Open**.

RELATED LINKS
Missing Files Dialog on page 197

Missing Files Dialog

This dialog opens when you open an audio montage, and some audio files that the audio montage refers to cannot be found. You can then search for the files or select a replacement.
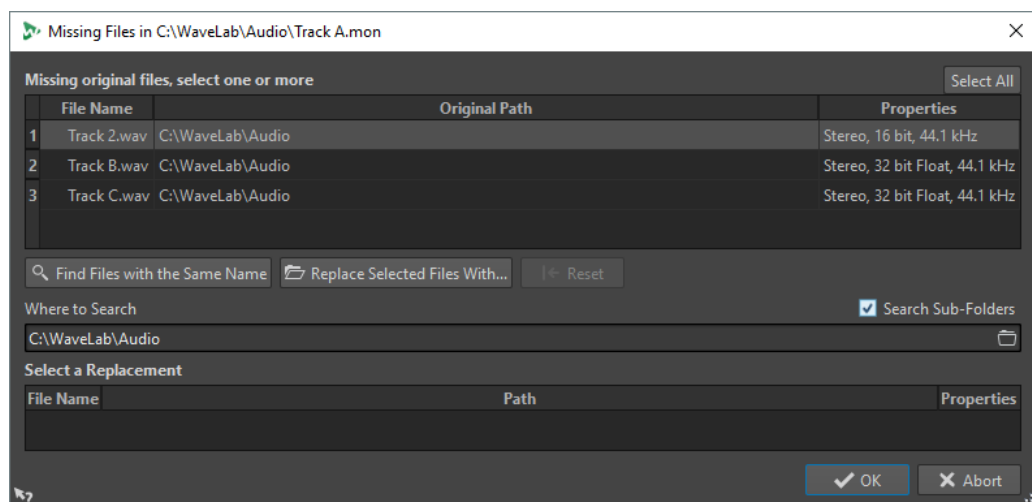
Missing Original Files

Lists the files that cannot be found. Each file can be replaced by an existing file. To search replacements for multiple files, select the files and specify a new path in the **Where to Search** field.

A file with a green checkmark is associated with a valid replacement. A file with a red checkmark is not yet associated with a valid replacement, but there are possible replacement candidates available at the bottom of this dialog.

Find Files with the Same Name

Instructs WaveLab Elements to find all files with the same name in the folder specified in the **Where to Search** field.

Replace Selected Files With

Replaces the missing files with a single specific file.

Reset

Removes all possible replacements for the selected missing files.

Where to Search

Lets you specify a location for searching files. Click **Find Files with the Same Name** to start the search.

Replacement List

Lists the files that can be used as a replacement. You can also drag a file into the list from the File Explorer/macOS Finder.

Assembling the Audio Montage

You assemble your audio montage by adding tracks and clips.

RELATED LINKS
Tracks on page 198
Clips on page 201

Tracks

Tracks are the structure used to organize clips. You can add mono tracks, stereo tracks, and video tracks.

● Mono and stereo tracks allow you to add clips to an audio montage.

● Video tracks allow you to add videos to an audio montage.

RELATED LINKS
Video Track on page 341
Adding Tracks on page 198

Adding Tracks

You can add stereo tracks, mono tracks, and video tracks.

PROCEDURE

1. Do one of the following:

● In the **Audio Montage** window, click **+** at the top of the track control area.
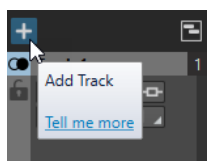
- Right-click the track control area to open the **Track** pop-up menu and select **Add Track**.

2. Select the track type that you want to add to your audio montage.

RELATED LINKS
Tracks on page 198
Track Control Area on page 178

Moving Tracks in the Track List

You can move tracks up or down in the track list.

CHOICES

- In the **Audio Montage** window, select a track and drag it up or down in the track list.
- At the bottom of the track control area, click the down arrow and select **Move Track Up** or **Move Track Down**.
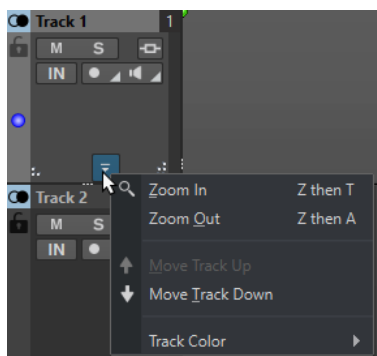
RELATED LINKS
Tracks on page 198
Track Control Area on page 178

Resizing Tracks

You can freely resize the track height and width.

There are different ways of resizing the track height and width, depending on where in the track control area of each track you click and drag.

CHOICES

- To change the track height of all tracks simultaneously, click and drag the lower left area of a track control area.
- To change the track height of the active track, click and drag the lower middle area of a track control area.
- To change the track height of the active track and the track below proportionally, click and drag the lower right area of a track control area.

RELATED LINKS
Tracks on page 198
Track Control Area on page 178

Removing Tracks

Removing a track with clips also removes the clips. However, the audio files to which the clips refer are not affected.

PROCEDURE

● In the track control area, right-click the track control area of the track that you want to remove and click **Remove Track**.

RELATED LINKS
Tracks on page 198
Track Control Area on page 178

Locking and Unlocking Tracks

You can lock tracks to prevent them from being accidentally moved, edited, or deleted.

● To lock a track, click the **Lock** button of the track in the track control area.
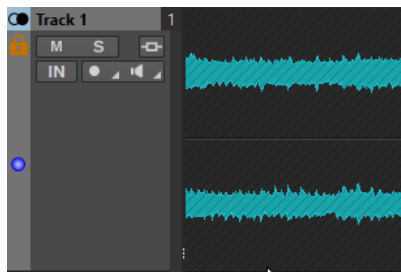
● To unlock a track, click the **Lock** button in the track control area again.

RELATED LINKS
Tracks on page 198
Track Control Area on page 178

Splitting Stereo Tracks into Mono Tracks

You can split stereo tracks into left/right or mid/side mono tracks. This is a virtual split which does not affect or create audio files.

PROCEDURE

● In the **Audio Montage** window, right-click the track control area of the track that you want to split and select **Split into Left/Right Mono Tracks**.

RESULT

The track is split. If there are clips on the track, the two stereo sides are now separate clips, allowing you to move and edit independently.

The mono tracks are automatically grouped and can only be moved and resized together.

RELATED LINKS
Track Control Area on page 178

Clips

The audio files that you insert to audio montages are represented as clips. A clip contains a reference to a source audio file on your hard disk as well as start and end positions in the file, volume and pan curves, fades, etc. This allows clips to play back smaller sections of their source audio files.

Any number of clips can reference the same source file. Because a clip only references to the original source file, it contains no audio data. Any number of clips can reference the same source file.

You can also use envelopes and effects on clips.

You can see the clips of the active audio montage in the **CD** window.
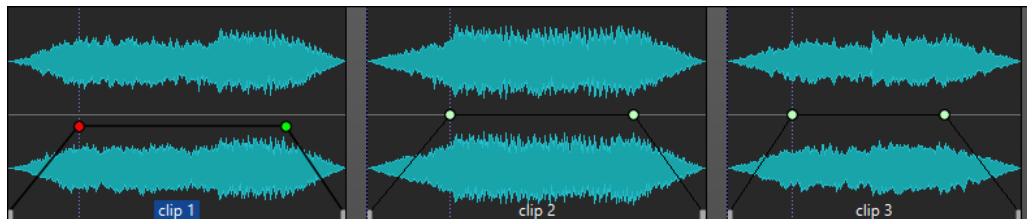
3 clips on a track

RELATED LINKS
Clip Editing on page 210

Inserting Audio Files into Audio Montages

When you insert audio files into audio montages, the audio files are represented as clips. There are several ways to insert audio files into audio montages.

RELATED LINKS
Clips on page 201
Inserting Audio Files into Audio Montages Using Drag and Drop on page 201
Inserting Audio Files into Audio Montages Using the Context Menu on page 202
Inserting Audio Files into Audio Montages Using Copy and Paste on page 202
Inserting Audio Files into Audio Montages Using the File Explorer/macOS Finder on page 202
Inserting Audio Files into Audio Montages Using the File Browser Window on page 203
Inserting Audio File Regions into Audio Montages Using Drag and Drop on page 203
Inserting Audio Files into Audio Montages by Copying From Other Audio Montages on page 204
Insert Stereo Audio Files into Mono Tracks or Vice Versa on page 204

Inserting Audio Files into Audio Montages Using Drag and Drop

You can drag an audio file or a section of an audio file from the wave window to the montage window to insert it into the audio montage.

PROCEDURE

1. In the wave window of the **Audio Editor**, do one of the following:

2. Do one of the following:

   - To add the whole audio file into the audio montage, drag the audio file tab to an audio montage tab and drop it on a track.

- To add a part of the audio file into the audio montage, select the audio part that you want to add to the audio montage, drag it to the audio montage tab, and drop it on a track.

RESULT

A clip is created, named after the original file.

RELATED LINKS

Inserting Audio Files into Audio Montages Using the Context Menu

The context menu of the montage window allows you to insert audio files into audio montages.

PROCEDURE

1. In the montage window, right-click an empty area of a track.

2. In the pop-up menu, click **Insert Audio Files** and select the audio file that you want to insert into the track.

RESULT

A clip is created, named after the original file.

Inserting Audio Files into Audio Montages Using Copy and Paste

You can copy and paste an audio file or a section of an audio file from the wave window to the montage window to insert it into the audio montage.

PROCEDURE

1. In the wave window of the **Audio Editor**, select the audio section to which you want the clip to refer to.

2. Select the **Edit** tab and click **Copy**, or press **Ctrl/Cmd** - **C** .

3. In the montage window, select the track where you want to insert the clip.

   The clip insert position is indicated by the edit cursor.

4. Select the **Edit** tab and click **Paste**, or press **Ctrl/Cmd** - **V** .

RESULT

A clip is created, named after the original file.

Inserting Audio Files into Audio Montages Using the File Explorer/macOS Finder

You can copy and paste an audio file from the File Explorer/macOS Finder to the montage window to insert it into the audio montage.

PROCEDURE

1. In the File Explorer/macOS Finder, select an audio file and press **Ctrl/Cmd** - **C** .

2. In the montage window, set the edit cursor at the position where you want to insert the clip.

3. Select the **Edit** tab and click **Paste**, or press **Ctrl/Cmd** - **V** .

RESULT

A clip is created, named after the original file.

Inserting Audio Files into Audio Montages Using the File Browser Window

You can drag an audio file from the **File Browser** window to the montage window to insert it into the audio montage.

NOTE

The following can also be done from the File Explorer/macOS Finder.

PROCEDURE

1. Select **Tool Windows** > **File Browser**.

2. In the **File Browser** window, select the audio files to which you want the clip to refer, and drag them on a track.

RESULT

A clip is created, named after the original file.

RELATED LINKS
File Browser Window on page 61

Inserting Audio File Regions into Audio Montages Using Drag and Drop

If you have defined marker regions in an audio file, you can drag these regions from the **File Browser** window onto a track.

PROCEDURE

1. Select **Tool Windows** > **File Browser**.

2. In the **File Browser** window, select the audio file from which you want to insert marker regions into your audio montage.

   On the right side of the **File Browser** window, the audio regions section shows the marker regions of the selected file. This section is hidden by default. To show the audio regions section, select an audio file that contains markers, and click **Show Audio Regions**.
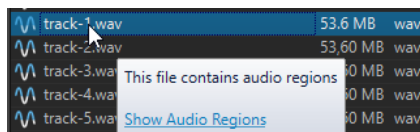
3. Drag any region to the track.

RESULT

A clip is created, named after the original file.

RELATED LINKS
File Browser Window on page 61

Inserting Audio Files into Audio Montages by Copying From Other Audio Montages

If you have opened more than one audio montage, you can copy clips from one audio montage to another, either by using drag and drop or by using copy and paste.

PROCEDURE

1. In an audio montage, select the clips that you want to insert into another audio montage.
2. Do one of the following:
    *   Drag the clip to the tab of another audio montage and drop it on a track.
    *   Click **Ctrl/Cmd**-**C**. Open another audio montage and place the edit cursor at the position where you want to insert the clip. Click **Ctrl/Cmd**-**V**.

Insert Stereo Audio Files into Mono Tracks or Vice Versa

When you insert a stereo audio file into a mono track, you can decide whether to automatically create a stereo track or split the stereo file on two mono tracks.

Insert Stereo Audio Files on Mono Tracks
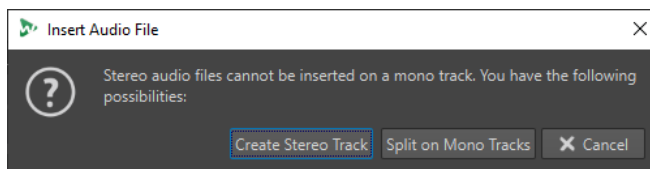
When you insert a stereo audio file into a mono track, the following options are available in the **Insert Audio File** dialog:

Create Stereo Track

Creates a stereo track and inserts the stereo audio file.

Split on Mono Tracks

Splits the stereo audio file on two mono tracks. If the track below the first track is already a mono track, this track is used for the second mono file. If there is no second mono track, a mono track is created automatically.

Insert Mono Audio Files on Stereo Tracks
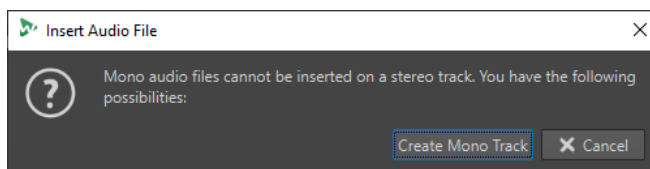
When you insert a mono audio file into a stereo track, you can select **Create Mono Track** to automatically create a mono track below the stereo track and insert the mono audio file here.

RELATED LINKS
Inserting Audio Files into Audio Montages on page 201

Mismatched Sample Rates When Inserting Audio Files

When inserting audio files with a different sample rate than the sample rates of the audio montage, WaveLab Elements can create and use resampled versions of the files.

The resampled file versions are created in the Data subfolder of the audio montage folder. The name of the file is the name of the original file name with the new sample rate as suffix. If the resampled file already exists, it is not recreated. However, you can also activate the option **Recreate Resampled Files** in the **Mismatched Sample Rates** dialog.

This creates a 32-bit float file without any dithering process.

RELATED LINKS
Mismatched Sample Rates Dialog on page 205

Mismatched Sample Rates Dialog

This dialog opens when you insert an audio file with a different sample rate than the sample rate of the audio montage. It allows you to create a resampled copy of the audio file.
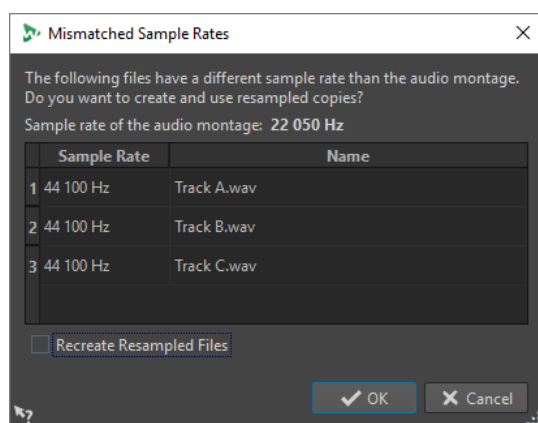
Recreate Resampled Files

If this option is activated and a resampled file exists, it is recreated. Otherwise, the existing version is used. Activate this option if the original audio file has been modified and you want to recreate its resampled version.

Multichannel Operations in the Audio Montage

You can open multichannel audio files in audio montages. Each track of the multichannel audio file is organized in channel clusters. A channel cluster is a logical group of channels. It is always one channel or a channel pair.

You can add plug-ins to individual channel clusters.

The channel layout of the audio montage must be compatible with the channels of the multichannel file. For example, you can open a 5.1 audio file or a stereo file in a 5.1 or 7.1 audio montage channel layout. But you cannot open a 5.1 audio file in a stereo audio montage channel layout.

To be able to use WaveLab Elements for multichannel audio files, you need an audio card/ interface with multiple inputs and outputs. You must also set up an ASIO driver in the **Audio Connections** tab and specify how the internal input/output channels are connected to your audio card.

Multichannel Configuration

You can configure the number of channels to use for each audio montage.

Which configuration you should select depends on a number of factors:

- The number of outputs that are available on your audio card. If you only have 4 outputs on your card, you can only use surround formats with 4 or less channels.

- Whether or not you intend to mix the audio montage to a surround format. If not, select the **Multi Mono** mode when working with Ambisonics files, for example.

- The intended use of the final surround mix. For example, if you want your mix to be compatible with the 5.1 surround set-up, select the **Surround** mode **5.1 (L R C LFE Ls Rs)**.

All multichannel configurations are internally assigned to surround channels in WaveLab Elements. This means that the channels go through the **Master Section** and then to the audio card or they are rendered to a multichannel file or a set of mono/stereo files.

Surround Mode in Audio Montages

If you are using **Surround** mode for an audio montage, you can choose between various multichannel configurations.

In the **Info** tab of the audio montage, select **Surround**. On the **Layout** pop-up menu, the following multichannel layouts are available:
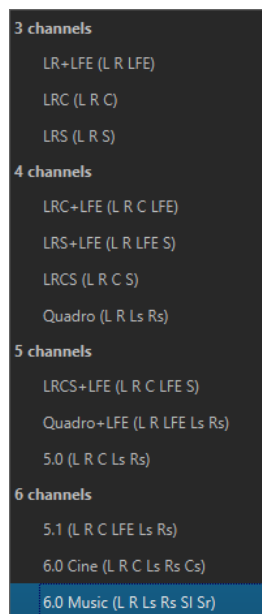
Assigning Track Channels to Output Channels

When you select a multichannel configuration, you must create and assign track channels to surround output channels manually.

PROCEDURE

1. In the **Audio Montage** window, click **Channel Output Routing** in the track control area for an audio track and select **Track Routing**.

   Each track has its own **Track Routing** dialog. You can have multiple **Track Routing** dialogs open at the same time.

2. In the **Track Routing** dialog, route each channel of the track to an output channel by activating the corresponding channels.
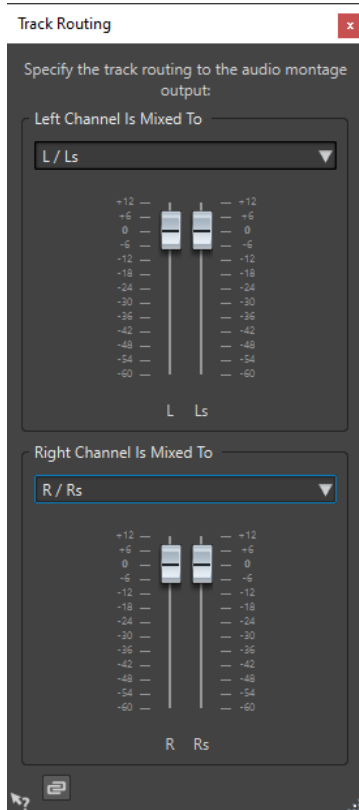
   Which channels are available depends on the selected channel configuration.

3. Click **OK**.

RESULT

If you have selected a surround format, you can route a track channel to several or all surround output channels.

RELATED LINKS
Track Routing Dialog on page 208
Track Control Area on page 178

Track Routing Dialog

In this dialog, you set up to which montage output channels the track channels in your audio montage are sent. The available channels depend on the selected channel configuration.

- To open the **Track Routing** dialog, in the **Audio Montage** window, click **Channel Output Routing** in the track control area for an audio track and select **Track Routing**.
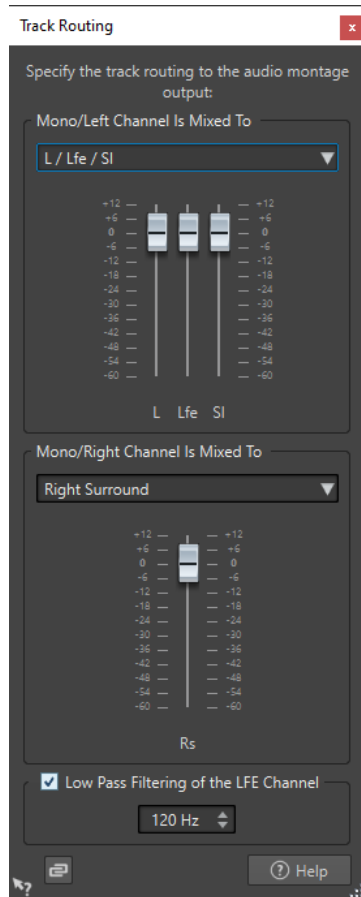
Top Audio Channel Is Sent To

Lets you select to which audio montage audio outputs the left channel of the track is sent.

Bottom Audio Channel Is Sent To

Lets you select to which audio montage audio outputs the right channel of the track is sent.

Gain

Each channel has a gain slider. This allows you to set make individual gain settings for each channel.

Low Pass Filtering of the LFE Channel

If an LFE output is selected, a low pass filter (12 dB/octave) can be applied to the track signal so that only the low frequency content can pass. The cutoff frequency for the filter can be adjusted.

Unlink Faders

Determines whether you can adjust the faders individually or together.

If **Unlink Faders** is deactivated, moving one fader also moves the other by the same amount. Activating **Unlink Faders** allows you to adjust the gain of the channels individually.

RELATED LINKS
Track Control Area on page 178
Assigning Track Channels to Output Channels on page 207

Multichannel Configurations in the Master Section

The **Master Section** automatically rearranges itself when starting playback of a multichannel audio montage. You can rearrange the **Master Section** without starting playback by clicking **Rearrange** in the **Settings** menu at the top of the **Master Section**.

The output channels for the selected channel configuration are displayed in the **Master Section**, with one level fader and clip indicator for each output channel.
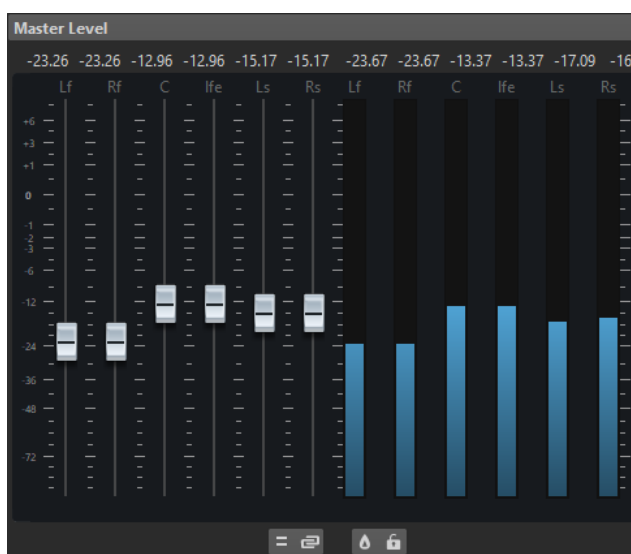
RELATED LINKS
Master Section on page 266

Monitoring a Stereo Mixdown of Multichannel Configurations

In the **Master Section**, you can monitor a stereo mixdown of a multichannel configuration. This allows you to preview a stereo mixdown setting for a surround project, for example.

PROCEDURE

1. In the **Master Section**, open the **Master Level** pane.

2. Below the master meter, click **Audio Channel Processing**.

3. Select **Mix to Stereo**.

Master Effects and Multichannel Audio Montages

Handling effects for a multichannel audio montage is similar to handling effects when working in stereo mode. However, not all plug-ins support multichannel operations. In this case, a warning is displayed when you try to insert them.

Clip Editing

All clips are displayed in the **CD** window. In this window, you can edit and rearrange clips and drag them into the audio montage.

The active clip is highlighted in the clips list.

RELATED LINKS
Clips on page 201
CD Window on page 247

Selecting Clips

You can edit multiple selected clips at once.

- To select a clip while deselecting all other selected clip, double-click the lower clip area.
- To select a clip, click it. Selected clips are displayed in a different color.
- To select multiple clips, **Ctrl/Cmd** -click the clips.
- To select a range of clips, **Shift** -click them.
- To select several adjacent clips, double-click the upper clip area, and after the second click, drag to select the adjacent clips.

RELATED LINKS
Selection Ranges in Audio Montages on page 211
Active Clip Menu on page 214

Active Clips vs. Non-Active Clips

An active clip is the clip that you selected, clicked, or edited last. Only one clip can be active at a time. By default, the active clip is distinguished by a highlighted name label. Some functions can only be processed on a active clip.
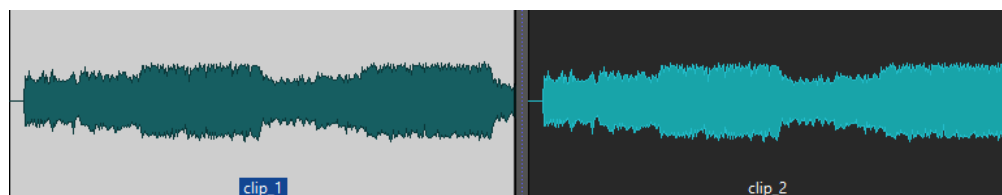
Active clip (left) and non-active clip (right)

- To open the **Active Clip** menu, right-click a clip.

RELATED LINKS
Selecting Clips on page 210

Selection Ranges in Audio Montages

A selection range is a selected area on a track. The selection range can be entirely or partially within a clip or an empty section of the track. You can make selection ranges on one or multiple tracks.

- To make a selection range, click the upper area of a track and drag to the left or right on one or multiple tracks.

Selection ranges are useful for the following:

- To edit clips by cutting or erasing the selection, or trimming the clip to the selection.
- To create a new clip by dragging the selection range to another track.
- To open a montage window with the selection range from the source audio file by dragging the selection range to the **Audio Editor**.
- To play back only the selection range, either the whole audio montage or only the clip with the intersecting clip part.
- To loop the playback within the selection by activating the loop and selecting the **Loop** mode on the transport bar.

Creating and Editing Selection Ranges in Audio Montages

You can resize, create, move, and remove selection ranges.

- To create a selection range in an empty area on a track, click and drag with the mouse. The start and end position and the length of the range are displayed on the info line.
- To create a selection range within a clip, click and drag with the mouse in the upper clip area. The start and end position and the length of the range are displayed on the info line.
- To create a selection range of the area between two markers, double-click between the markers.
- To create a selection range from a region marker pair, press **Shift**, and double-click the start or end marker. In the **Markers** window, you can also double-click the **Length** field of a region marker.
- To create a selection range from a CD track, open the **CD** window and double-click the number to the left of the corresponding track.
- To resize a selection range, **Shift**-click and drag to the left or to the right, or click and drag the edges of the selection range.
- To move a selection range, press **Ctrl/Cmd** and **Shift**, and drag the selection range to the left or right.
- To deselect a selection range, click elsewhere in the audio montage, or press **Esc**.

RELATED LINKS
Markers Window on page 289
CD Window on page 247

Rearranging Clips

You can freely arrange clips in the montage window.

Reordering Clips in Audio Montages By Dragging

In the **CD** window, you can re-order clips by dragging them to another position in the list.

PROCEDURE

1. Open the **CD** window.

2. In the clip list, drag a clip to another position in the list.

   You can move more than one clip at the same time, by selecting multiple clips and dragging them. If more than one clip is selected, all clips between the leftmost selected clip and the rightmost selected clips are moved.

RELATED LINKS
CD Window on page 247

Info Line

The info line at the bottom of the **Audio Montage** window shows what happens when you click the mouse button with or without modifier keys, depending on the cursor position.
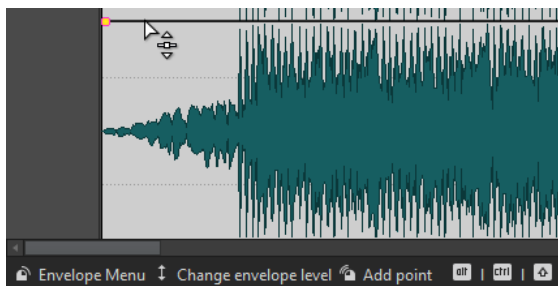
The following symbols are used on the info line:

Single-click

Indicates what happens when you click.

Double-click

Indicates what happens when you double-click.

Right-click

Indicates that you can right-click to display a menu. The name of the menu is displayed to the right of the symbol.

Ctrl/Cmd -click

Indicates that you can **Ctrl/Cmd** -click for an additional function.

Alt -click

Indicates that you can **Alt** -click for an additional function.

Shift -click

Indicates that you can **Shift** -click for an additional function.

Drag up/down

Indicates what happens when you click and drag up or down.

Drag left/right

Indicates what happens when you click and drag left or right.

Drag in any direction

Indicates what happens when you click and drag an item in any direction within the audio montage.

Drag out of the audio montage

Indicates what happens when you click and drag an item out of the audio montage.

Moving/Resizing clips or changing envelope values

This indicates that you are moving or resizing clips, or changing envelope values, for example.

Combined modifier keys

Indicates that you can use combined modifier keys.

Magnetic Bounds in Audio Montages

Some positions, such as markers or the start and end of a clip, can be defined as magnetic. Dragged elements can snap to these positions. This makes it easier to position items accurately.

For example, when you move or resize a clip, and its edges or its cue point get close to one of the magnetic bounds, the clip snaps to this position. A label is displayed, indicating the snap position.
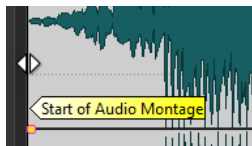
To place the cursor at a magnetic position, click the time line and hold the mouse button pressed. When you now move the cursor vertically, the cursor jumps to the next magnetic bound.

Activating Snapping to Magnets

To make use of the magnetic bounds function, **Snap to Magnets** must be activated.

PROCEDURE

1. In the **Audio Montage** window, select the **Edit** tab.

2. In the **Snapping** section, activate **Snap to Magnets**.

RELATED LINKS
Magnetic Bounds in Audio Montages on page 213

Clip Context Menus

Many editing functions for clips can be accessed via the clip context menus. Depending on where you right-click the clip, different context menus are available.
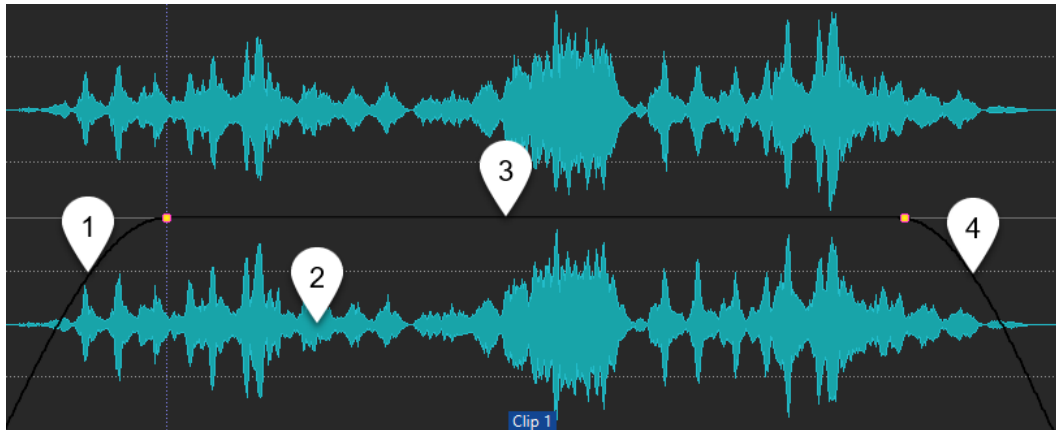
1   Fade in section

Opens the **Fade In** pop-up menu where you can edit the fade in.

2   Any area of a clip

Opens the **Active Clip** pop-up menu where you can edit the active clip.

3   Sustain section

Opens the **Envelope** pop-up menu where you can edit the envelope.

4   Fade out section

Opens the **Fade Out** pop-up menu where you can edit the fade out.

RELATED LINKS

Active Clip Menu

The **Active Clip** pop-up menu allows you to edit and play back the active clip with or without pre-roll.

●   To open the **Active Clip** pop-up menu, right-click a clip.
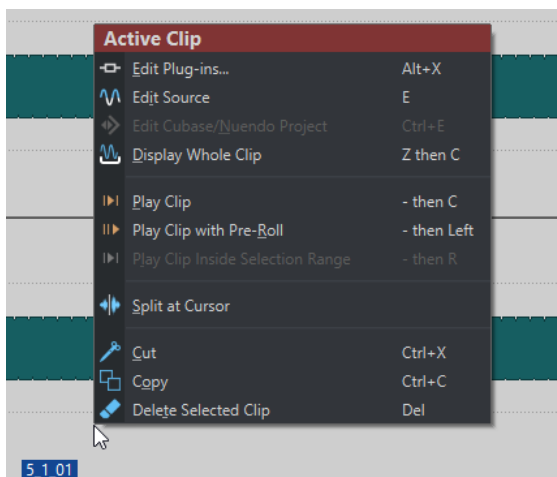
Edit Plug-ins

Opens the plug-in window of the plug-ins that are applied to the active clip. You can also right-click the clip name and select a plug-in to open the corresponding plug-in window.

Edit Source

Opens the source audio file of the clip in the **Audio Editor**.

Edit Cubase/Nuendo Project

Opens the project of the audio file in Cubase/Nuendo.

This allows you to correct issues that you have identified during mixing and correct these issues in the audio file in Cubase/Nuendo.

Display Whole Clip

Adjusts the view to display the active clip.

Play Clip

Plays back the active clip.

Play Clip with Pre-Roll

Plays back the active clip with pre-roll.

Play Clip Inside Selection Range

Plays back the selected audio range. Overlapping clips or clips on other tracks are muted.

Split at Cursor

Splits the active clip at the edit cursor position. You can also split at the edit cursor position by double-clicking the edit cursor or pressing **S** .

Cut

Cuts the active clip to the clipboard. You can then paste it to another position on an audio montage track.

Copy

Copies the active clip to the clipboard.

Delete

Deletes the active clip.

RELATED LINKS
Editing Source Files of Clips on page 221
Cubase/Nuendo as External Editor for WaveLab Elements on page 350
Clip Context Menus on page 214

Moving and Crossfading Clips

You can let clips overlap other clips, move them, and create crossfades between clips.

RELATED LINKS
Moving Clips on page 216

Moving Clips

You can drag one clip or all selected clips to another position.

> NOTE
>
> The channel configuration of the clip must match the destination track.

PROCEDURE

1. In the montage window, select the clips that you want to move.

2. Click the clip area, and drag the clips in any direction.

   While dragging, the info line displays the current start position of the clip.

RELATED LINKS
Moving and Crossfading Clips on page 215

Options for Moving and Crossfading Clips

There are several options that help you when moving and crossfading clips.

Ripple

Ripple determines whether clips to the right are moved, when you move a clip. The ripple options are available in the **Edit** tab of the **Audio Montage** window.

Track

If this option is activated and you move a clip horizontally, all clips on the active track that are located to the right of the edited clip are also moved. This option also applies when moving or resizing clips, and when inserting or pasting more than one clip at the same time.

Global

If this option is activated and you move a clip horizontally, all clips on all tracks that are located to the right of the edited clip are also moved. This option is taken into account when moving or resizing clips, and when inserting or pasting more than one clip at the same time.

None

Deactivates the ripple function. That is, only the selected clip is moved.

Crossfading

The following crossfading options are available in the **Fade** tab of the **Audio Montage** window in the **Options** section.

Overlaps

This pop-up menu allows you to set the automatic crossfading behavior.

- If **No Automatic Crossfading** is activated, no automatic crossfading is performed when clips overlap.

- If **Free Overlaps** is activated, automatic crossfades are created when a clip overlaps another clip on the same track. The length of the overlap determines the length of the crossfade.

Options

- If **Create Default Fades in New Clips** is activated, all new clips get the default fade in and fade out shape and length. For clips that are created by splitting a clip, only the default fade time is used.

RELATED LINKS
Edit Tab (Audio Montage) on page 185
Fade Tab (Audio Montage) on page 188

Overlapping Clips

You can move clips so that they overlap each other.

Note the following:

- The tracks in the audio montage are polyphonic, which means that each track can play back several overlapping clips at the same time. Overlapping clips are transparent, allowing you to see the underlying clips and their waveforms.
- There are crossfading options that automatically adjust the level envelope curves when you overlap clips.

Duplicating Clips

You can quickly duplicate one or several clips via drag and drop. You can drag the clip duplicates to another position on the same track, another track, or another audio montage.

NOTE

The channel configuration of the clip must match the destination track.

PROCEDURE

1. In the montage window, select one or more clips.
2. Click the upper clip area and drag the clips to another position on the same track, another track, or another audio montage tab.
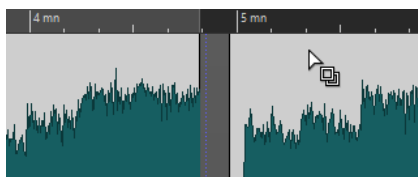
The cursor changes to indicate that you are located in the upper clip area.

While you are dragging, a dotted line indicates where the first of the copied clips will be placed. The position is also indicated on the info line.

The **Ripple** settings that you can make in the **Edit** tab of the **Audio Montage** window are taken into account.

RELATED LINKS
Edit Tab (Audio Montage) on page 185

Clip Resizing

In this context, resizing usually means moving the start and end points of a clip. This reveals more or less of the original audio file.

To resize a clip, click the left or right edge of the clip, and move the start or end point to the left or to the right. You cannot drag the edge of a clip past the start or end point of the audio file it refers to.

If you press **Alt** when resizing, all selected clips are resized by the same amount.
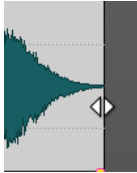
Resized Clip Indicator

When you resize a clip, a small triangle is shown in the upper left or right corner of the clip, depending on whether you resize the beginning or the end of the clip. This indicator can help you find and correct errors, for example, when you cut too much of the clip and the start or the end of the audio is missing.
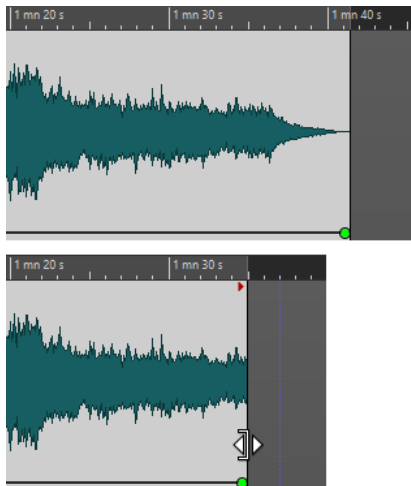
Clip before and after resizing it. The indicator in the top right corner shows that the clip has been resized.

When you hover the mouse over the resized clip indicator, a tooltip shows the audio length before/after the clip. The displayed time unit depends on the time unit of the time ruler.
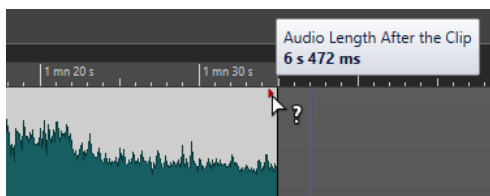
RELATED LINKS
Options for Moving and Crossfading Clips on page 216

Splitting Clips

You can split clips to turn one clip into two independent clips. The two clips have the same name and settings. Envelopes and fades are converted so that the two clips play back as if they were still one clip.

PREREQUISITE

Decide whether you want to automatically create crossfades between the left and right clip. To activate/deactivate this option, select the **Fade** tab, and activate/deactivate **Create Default Fades in New Clips** in the **Options** section.

PROCEDURE

1. In the montage window, click the position where you want to split the clip.

2. Position the mouse cursor on the edit cursor position in the top clip area.

   The cursor becomes a pair of scissors.
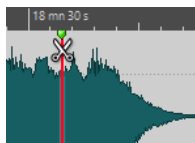
3. Double-click.

RESULT

The clip is split in two.

RELATED LINKS

Split Clip at Silences Dialog

You can remove silent clip parts and create a new clip at the cut position.

- To open the **Split Clip at Silences** dialog, select the **Edit** tab in the **Audio Montage** window, and click **Split at Silences** in the **Split** section.

Minimum Clip Length

Sets the minimum length of the resulting regions after splitting. Non-silent sections shorter than this length are not split.

Minimum Silence between Regions

Sets the minimum length of a silent region. Silent regions shorter than this length will not create split regions.

Silence Is Defined as a Signal Below (RMS)

Allows you to set the threshold level for silence detection. Levels below this value are considered silent.

Automatic Level Detection (Two-Stage Analysis, Slower)

If this option is activated, the file is analyzed and automatically split where WaveLab Elements detects silence. The file is read twice.

Separate Resulting Clips by a Fixed Gap

If this option is activated, the resulting clips are separated from each other by 2 seconds. If this option is deactivated, the gaps between the resulting clips are determined by the length of the removed silence.

Deleting Parts of Clips Inside Selection Ranges

Deleting the part of a clip inside a selection range removes the selected range and moves the right section of the clip to the left to fill the gap.

PROCEDURE

1. In the montage window, select a range in a clip.

2. Select the **Edit** tab.

3. In the **Removal** section, click **Delete Selected Range**.

RESULT

The selected range is deleted and the right section of the clip is moved to the left to fill the gap.

Deleting Clips

Deleting clips does not delete the audio file that is referenced by the clips.

PROCEDURE

● Do one of the following:

  ● Right-click a clip and select **Delete**.

  ● Select a clip and press **Delete** .
    To ensure that there is no selection range, press **Esc** .

Clips and Cue Points

A cue point is a defined position marker that belongs to a clip. It may be positioned inside or outside the clip. Cue points are displayed as dotted vertical lines.
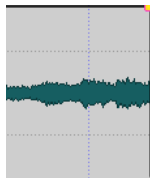
When you move a clip, its cue point is magnetic to any edges, markers, or positions. There are several uses for this:

● Set the cue point at a relevant position in the audio to align the clip with other clips, etc.

● Set the cue point before the start of a clip to position clips in a row with pre-defined spaces.

● Set the cue point at the fade in or fade out point of a clip to maintain defined fade lengths when crossfading.

NOTE

Each clip can only have one cue point. If you select another cue point insert option, the cue point is moved to a new position.

RELATED LINKS
Adding Cue Points on page 221

Adding Cue Points

You can add one cue point for each clip.

PROCEDURE

1. In the audio montage, click the clip position where you want to set a cue point.

2. Select the **Edit** tab.

3. In the **Clip** section, open the **Cue Point** pop-up menu.

4. Select one of the following options:

   - **Set at Cursor**
   - **Set at Default Gap Position**
   - **Follows Fade In End Point**
   - **Follows Fade Out Start Point**

5. Optional: Select **Custom Cue End** and specify a custom cue end point.

RELATED LINKS
Clips and Cue Points on page 220
Edit Tab (Audio Montage) on page 185

Managing Source Files of Clips

You can edit files that are used in the current audio montage in the **Audio Editor**.

RELATED LINKS
Editing Source Files of Clips on page 221

Editing Source Files of Clips

Editing the audio montage may require that you process or edit the actual audio files that are referenced by the clips.

Use one of the following methods to edit the source file of a clip:

- Right-click the clip that you want to edit and select **Edit Source**. The source file of the clip opens in the **Audio Editor**. Edit the clip, save it, and return to the audio montage.

- Double-click the clip and drag the clip to the tab list or in the **Audio Editor**.

Note the following:

- Any editing that you perform this way affects the source audio file and thereby all clips that use the audio file, including clips in other audio montages.

- You can undo/redo all changes in audio files, even after saving the file. These changes are reflected immediately in all open audio montages.

- If you use **File** > **Save As** to save the source audio file with a different name, all open audio montages that refer to the file now refer to the new file.

Envelopes for Clips

For clips in the audio montage, you can create envelopes for volume and fades, and for panning.

You can create an independent level envelope curve to automate the level, to create fades and crossfades, and to mute clip sections.

You can also draw pan envelopes to automate pan settings for clips. For mono clips, pan governs the left/right position in the stereo field. For stereo clips, pan sets the left/right balance.

You can edit the envelope settings on the **Envelope** tab, or by right-clicking an envelope curve. The settings menu contains different options depending on whether you click the fade in part, the fade out part, or the sustain part.

RELATED LINKS
Envelope Tab (Audio Montage) on page 189

Level Envelopes

By default, all clips display a level envelope curve. The envelope consists of three parts: the fade in part, the sustain part, and the fade out part.

The points on the left and right side of the curve are the fade in and fade out junction points that separate the fade parts from the sustain part. The gray points at the start of a fade-in and at the end of a fade-out allow you to see small fades even when you have fully zoomed out.
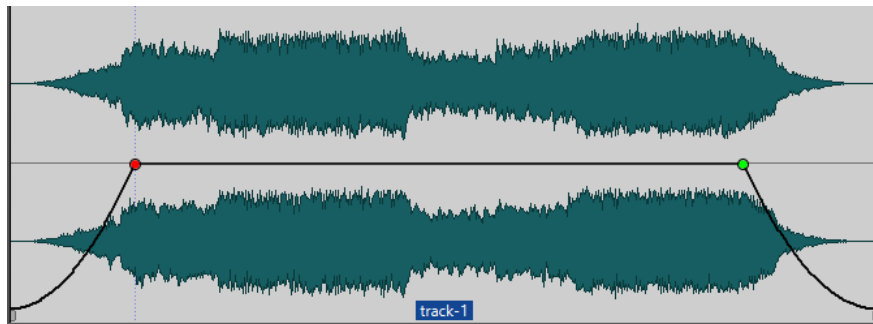
The envelope curve indicates if points, fade ins, or fade outs have been defined. In addition to the curve, changes in the level envelope are also reflected in the waveform.

RELATED LINKS
Envelopes for Clips on page 221

Selecting Envelopes

You can select volume/fade envelopes and pan envelopes.

PROCEDURE

1. In the montage window, select a clip.

2. Select the **Envelope** tab.

3. In the **Selector** section, open the **Envelope Type** pop-up menu, and select if you want to edit the **Volume/Fades** envelope or the **Pan** envelope.

RELATED LINKS
Envelopes for Clips on page 221
Envelope Tab (Audio Montage) on page 189

Hiding Envelope Curves

All clips display envelopes by default. You can hide these envelopes. However, hidden envelopes are still active.

PROCEDURE

1. In the montage window, select a clip.

2. Select the **Envelope** tab.

3. In the **Selector** section, open the **Envelope Type** pop-up menu, and select **Hide All**.

RELATED LINKS
Envelopes for Clips on page 221
Envelope Tab (Audio Montage) on page 189

Clip Envelope Editing

Curve points allow you to create volume curves, pan curves, and fade curves for a clip. You can edit the envelope curve by adding and moving curve points.

RELATED LINKS
Editing Envelope Curves on page 224

Adding Envelope Curve Points

You can add one or multiple envelope curve points.

CHOICES

*   To add a curve point, double-click the envelope curve.

    If you keep the mouse button pressed after double-clicking the envelope curve, you can move the curve point to another position.

*   To add multiple curve points within a selection range, do one of the following:

    *   To add three curve points, make a selection range, and double-click the envelope curve within the selection range.

        This creates a curve point at the start and the end of the selection, and a curve point at the position that you have clicked. If the selection range already contains a curve point and you double-click the envelope curve, two curve points are created.
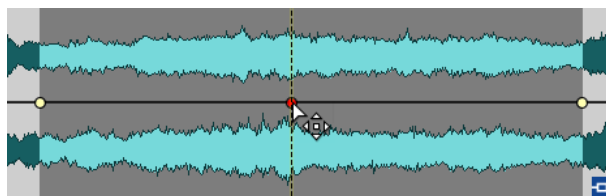
    *   To add four curve points with two curve points at the beginning of the selection and two curve points at the end of the selection, make a selection range, and click and drag the envelope curve up or down.
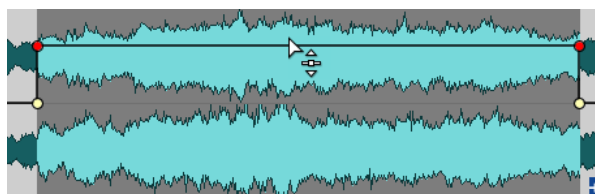
This only works if the selection range does not contain any curve points. The distance between the first and the second, and between the third and the last curve point is 20 ms by default.

● To add four curve points that have an equal distance to each other, make a selection range, press **Ctrl/Cmd** , and click and drag the envelope curve up or down.
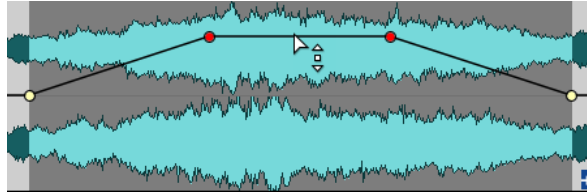
This only works if the selection range does not contain any curve points.

● To add four curve points where the two curve points in the middle have a greater distance to each other that to the first and last curve points, make a selection range, press **Ctrl/Cmd** - **Alt** , and click and drag the envelope curve up or down.
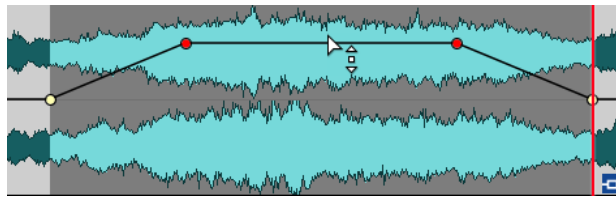
This only works if the selection range does not contain any curve points.

RELATED LINKS
Envelopes for Clips on page 221
Editing Envelope Curves on page 224

Editing Envelope Curves

Many of the editing operations that are commonly used in the context of your computer operating system can be applied when editing envelope curves. On top of these, a number of specific procedures apply.

CHOICES

● To delete a curve point, double-click the curve point. The curve point between the sustain and fade parts of the envelope cannot be deleted.

● To select multiple curve points, hold down **Ctrl/Cmd** and click the curve points that you want to select.

● To select a range of points, **Alt** -click and drag to create a selection rectangle.

● To delete multiple curve points, select the curve points that you want to delete, right-click one of the points, and select **Delete Selected Points**.

● To move all selected points, click one of the selected points and drag.

● To raise or lower the value of two consecutive curve points, **Ctrl/Cmd** -click the segment between the points and drag up or down.

● To change the time position of two consecutive curve points, **Shift** -click the segment between the points and drag left or right.

● To raise or lower the entire envelope curve, make sure that no curve point is selected, click the envelope curve, and drag up or down. Do not drag a segment that is limited by selected points.

● To adjust the envelopes in all selected clips, hold down **Alt** , and drag any envelope curve up or down. This is a quick way to adjust the level or pan of multiple clips at the same time and also to adjust both sides of a stereo envelope simultaneously.

- To move a fade in/fade out point vertically, **Ctrl/Cmd** -click and drag the fade point.
- To change the level or the fade in/out time of multiple envelopes at the same time, select the clips that you want to edit, press **Alt** , and edit the envelope with the mouse.

RELATED LINKS
Envelopes for Clips on page 221
Adding Envelope Curve Points on page 223

Resetting Envelope Curves

You can reset curve points to the default level 0 dB.

CHOICES
- To reset a single point to 0 dB, select the point, right-click it, and select **Reset Selected Points**.
- To reset the whole envelope curve to default, right-click the envelope curve, and select **Reset Level to 0 dB**.

RELATED LINKS
Clip Envelope Editing on page 223
Envelopes for Clips on page 221

Raising Selection Levels

You can raise the audio level with specific fall and rise times (by default 20 ms) and then adjust the level.

PROCEDURE
1. In the montage window, in a clip, select the range for the section that you want to raise in level.
2. Right-click the envelope curve, and select **Raise Level of Selection with Envelope**.

   The level of the selection range is raised.
3. Click the envelope of the selection range and drag up or down to adjust the level.

RELATED LINKS
Clip Envelope Editing on page 223

Muting Selected Ranges of Clips

You can mute a selected range by lowering the volume to -144 dB.

Muted sections are not affected when you drag the envelope curve up or down.

PROCEDURE
1. In the montage window, in a clip, make a selection range for the section that you want to mute.
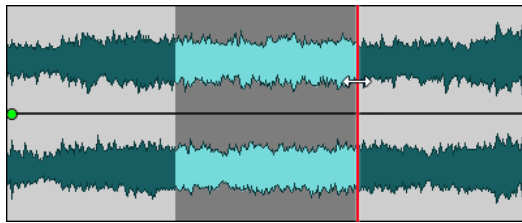
2. Right-click the envelope curve, and select **Mute Selection with Envelope**.

RESULT

The section is muted. A fade in and fade out of 20 ms is applied to the muted section.

RELATED LINKS
Clip Envelope Editing on page 223

Changing Overall Level Envelopes of Clips

The default envelope curve contains no level envelope points, but you can use it to change the overall level for a clip.

PROCEDURE

1. In the montage window, place the mouse cursor on the envelope curve.

The mouse cursor takes the shape of a circle with two arrows that point up and down.
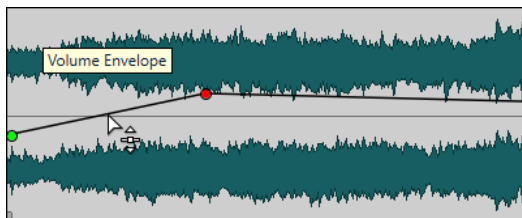
2. Click and drag the curve up or down to change the clip envelope level.

RELATED LINKS
Clip Envelope Editing on page 223

Pan Laws

The power of the sum of the channels drops by about 3 dB if a signal is panned hard left or right, compared to the same signal being panned center. This can be compensated with pan laws.

Experiment with the laws to hear which fits best. The pan laws can be set for tracks, clips, and the montage output.

● To set the pan laws for clips, use the **Pan Law** pop-up menu in the **Envelope** tab in the **Montage** window, or use the **Pan Law** pop-up menu and knob in the **Inspector** window.

- To set the pan laws for tracks and the montage output, use the **Pan Law** pop-up menu and knob in the **Inspector** window.

The following pan laws are available:

Channel Damp (0 dB/Mute)

This law does not compensate for power loss. If a signal is panned hard left or right, the power of the sum of the channels drops by 3 dB.

Constant Power (+3 dB/Mute)

This is the default law. Regardless of the pan position, the power of the sum of the channels remains constant.

Channel Boost (+4.5 dB/Mute)

If this law is selected and a signal is panned hard left or right, the power of the sum of the channels is higher than with a signal-panned center.

Channel Boost (+6 dB/Mute)

If this law is selected and a signal is panned hard left or right, the power of the sum of the channels is higher than with a signal-panned center. This is the same as the previous option, but with even greater power boost.

RELATED LINKS
Envelope Tab (Audio Montage) on page 189
Inspector Window on page 234

Track Ducking

Ducking allows you to control the level of an audio track with another audio track.

Usually, this is used to attenuate the level of an audio track that contains music or ambience sound whenever a signal is present on an accompanying voice track. The track containing the music is called the carrier track and the track containing the voice recording is called the modulator track.

You can select multiple voice tracks as modulator tracks for a carrier track. You can also apply ducking to modulator tracks, for example, to give one voice track priority over another.

RELATED LINKS
Applying Ducking for Tracks on page 227
Ducker Settings for Track Ducking on page 228

Applying Ducking for Tracks

PREREQUISITE

You have two audio tracks and you want to attenuate the level of one of the tracks every time a signal is present on the other track.

PROCEDURE

1. In the montage window, select the carrier track, that is, the track containing the music.

2. Right-click the track control area of the carrier track and click **Show Ducking Controls**.

3. In the track control area of the carrier track, activate **Ducker On/Off**.

4. Click **Source** to open the **Modulator Tracks** menu and select one or multiple modulator tracks, that is, the tracks containing the voice recording.
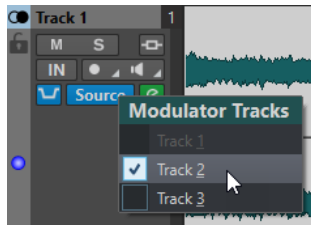
5. Play back the audio montage.

   The volume of the music track is lowered every time the voice track contains a signal.

6. Optional: Click **Ducker Settings** to open the **Ducker** plug-in and change the ducking settings to fine-tune the ducking effect.

7. Optional: If you are using multiple modulator tracks, you can also apply ducking to modulator tracks.

RELATED LINKS
Adding Tracks on page 198
Track Control Area for Stereo and Mono Tracks on page 179
Ducker Settings for Track Ducking on page 228

Ducker Settings for Track Ducking

The **Ducker** settings allow you to make settings for the ducking effect for tracks.

● To open the **Ducker** settings, activate **Ducker On/Off** in the track control area and click **Ducker Settings**.
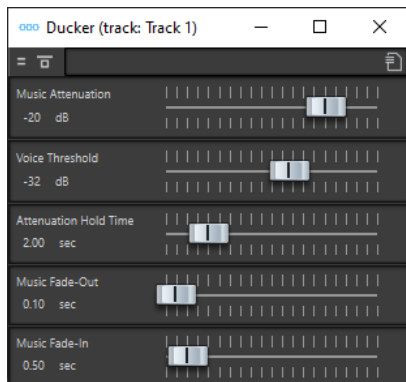
Bypass Effect

If this option is activated, the **Ducker** is bypassed during playback.
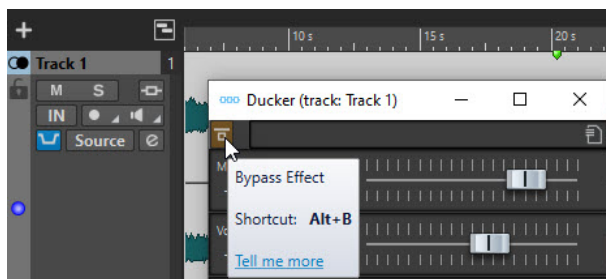
Presets

Allows you to save and load ducking presets.

Music Attenuation

Allows you to specify the level reduction that is applied to the music track (carrier).

Voice Threshold

Allows you to set the level threshold of the voice track (modulator) that triggers ducking. If the level of the voice track exceeds the threshold, the level of the music track (carrier) is lowered.

Attenuation Hold Time

When the level of the voice track falls below the set voice threshold, the **Attenuation Hold Time** determines how long the level of the carrier track stays reduced before it starts rising to its original level again.

Music Fade-Out

Determines the time it takes for the music level to change from 0 dB to the set **Music Attenuation** level.

Music Fade-In

Determines the time after which the level rises to the original level when the level of the voice track (modulator) falls below the set **Voice Threshold** and after the specified **Attenuation Hold Time**.

RELATED LINKS
Track Ducking on page 227
Track Control Area for Stereo and Mono Tracks on page 179

Fades and Crossfades in Audio Montages

A fade in is a gradual increase in level and a fade out is a gradual decrease in level. A crossfade is a gradual fade between two sounds, where one is faded in and the other faded out.

RELATED LINKS
Creating Fades in Clips on page 229

Creating Fades in Clips

By default, all clips display fade in and fade out junction points. These can be dragged horizontally to create a fade in or fade out for a clip.

You can add envelope points to a fade just as with level envelopes.

- To create a fade in, click the fade in point at the start of a clip, and drag it to the right.

- To create a fade out, click the fade out point at the end of a clip, and drag it to the left.

- To create a fade in or fade out at a specific time position, use set **Apply Fade Time** option in the **Fade** tab. Enter the time value in the time field and click **Apply Fade Time**.

- To move a fade in/fade out point vertically, press **Ctrl/Cmd** while dragging.

- To adjust the fade in/fade out points in all selected clips simultaneously, hold down **Alt** , and drag a fade in/fade out point up or down. This is a quick way to adjust the fades of multiple clips at the same time.

- To create a crossfade, move a clip on another. A crossfade is automatically created at the junction point.

The resulting fade in/fade out curve is displayed in the clip, and the fade is also reflected in the waveform. If you position the mouse over the fade in point, the fade in time is displayed in seconds and milliseconds and the volume in dB.
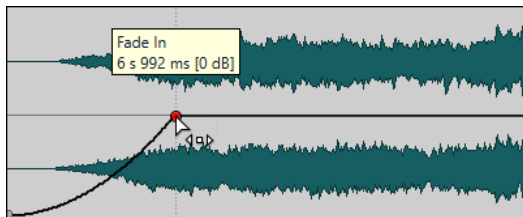
RELATED LINKS
Fades and Crossfades in Audio Montages on page 229
Fade Tab (Audio Montage) on page 188

Fade In and Fade Out Menus

In this menu, you can select various preset fade curves and other fade-related options.

● To open the **Fade In** or **Fade Out** pop-up menu, right-click the fade in or fade out points.

Zoom to Fade In Range/Zoom to Fade Out Range

Adjusts the view to mainly display the fade in/fade out part of the active clip.

Linear

Changes the level linearly.
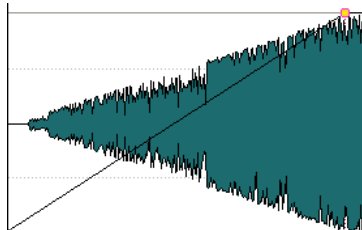
Sinus (*)

Changes the level according to the first quarter period of the sine curve. When used in a crossfade, the loudness (RMS) remains constant during the transition.
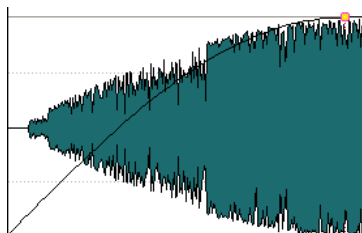
Square-root (*)

Changes the level according to the square-root curve. When used in a crossfade, the loudness (RMS) remains constant during the transition.
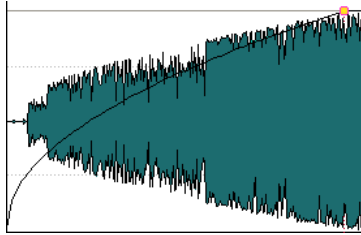
Sinusoid

 Changes the level according to a half period part of the sine curve.
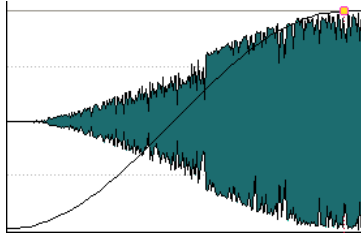
Logarithmic

 Changes the level logarithmically.
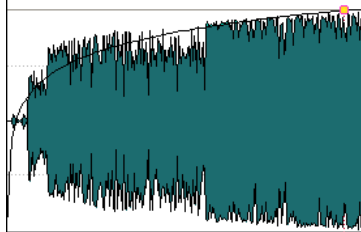
Exponential

 Changes the level exponentially.
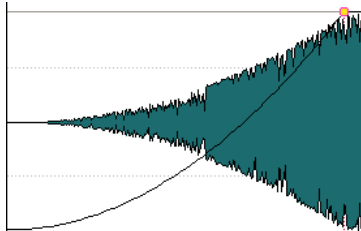
Exponential+

 Changes the level strongly exponential.
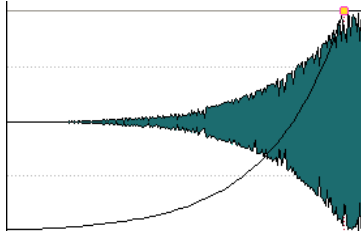
RELATED LINKS
Fades and Crossfades in Audio Montages on page 229

Applying Default Fades to New Clips

All new clips that are imported or recorded in the audio montage get the default fade in and fade out shape and length if **Create Default Fades in New Clips** is active. In this case, the default crossfade shapes are used. This also applies to clips that are created by splitting clips.

PROCEDURE

1. Open an audio montage and select the **Fade** tab.

2. In the **Options** section, open the **Options** pop-up menu.

3. Activate **Create Default Fades in New Clips**.

RELATED LINKS
Fades and Crossfades in Audio Montages on page 229
Fade Tab (Audio Montage) on page 188

Crossfade Editing

You can create crossfades with independent shapes and lengths for the fade in and fade out curves.

The default automatic crossfade is linear. It uses the same shape and fade lengths for fade in and fade out. The following rules apply:

- A crossfade includes fade in and fade out.

- You can edit the fade in and fade out curves in crossfades in the same way as fades.

- To resize the crossfade time symmetrically, press **Shift**, click the crossfade area, and drag left and right.

- To move the crossfade region while keeping its length, press **Ctrl/Cmd**, click the crossfade area, and drag left and right.

- When you move a clip so that it overlaps another clip to create a crossfade, and neither clip has a defined fade in the overlap, a default crossfade is created.

- When moving a clip with a defined fade curve so that it overlaps another clip without a defined fade, the unmoved clip automatically gets the same fade shape as the moved clip, with amplitude compensation. This only applies if the fade out length of the unmoved clip is set to zero.
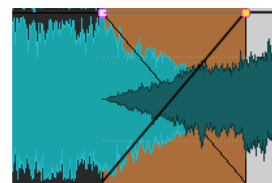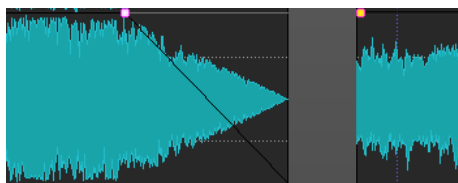
- If both clips have different defined fade curves, an asymmetrical crossfade is created.
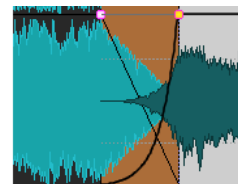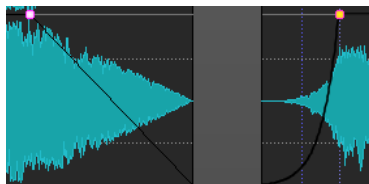
RELATED LINKS
Options for Moving and Crossfading Clips on page 216

Effects for Tracks, Clips, and the Montage Output

You can add VST effect plug-ins to individual clips, tracks, or the output of an audio montage. Clip effects affect individual clips only, track effects affect all clips on a track, and the montage output affects the whole audio montage.

VST 2 and VST 3 plug-ins can be used in the audio montage. Each clip, track, and the montage output can be independently processed by a maximum of eight VST effect plug-ins.

Effects are configured as follows:

- As inserts, where the entire audio is processed by the effects.
- As send effects (split mode), where the balance between the unprocessed sound and the effect send level can be controlled by effect envelope curves (clip effects and specific VST 2 plug-ins only).

An icon in front of a clip name indicates that effects are applied to a clip.
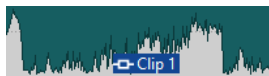
Hovering over a clip name shows the effects that are used for the clip.
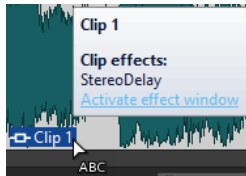
NOTE

- Only clip effects for clips that are active at the current playback position consume CPU power. Track and montage output effects are always active.
- The first time that you play an audio montage after is has been opened or copied, the program has to load all effects into memory. If you have many effects, this can result in a short silence before the playback starts.
- Effects that are used for tracks must support stereo audio, even if the audio track is mono.

RELATED LINKS

Montage Output Effects

You can add montage output effects to an audio montage. While the **Master Section** is shared among all audio montages, the montage output effects are local to each montage. This allows you to have a fully embedded project, without needing to use the **Master Section**.

The montage output effects are located at the output of the audio montage.

NOTE

If you want to use a dithering plug-in, place it in the montage output.

Inspector Window

This window allows you to add effect plug-ins to tracks, clips, and the montage output, and edit pan and gain settings.

- To open the **Inspector** window, open an audio montage and select **Tool Windows** > **Inspector**.

Clip/Track/Output

At the top of the **Inspector**, you can select if you want to display and edit the plug-ins for clips, tracks, or the montage output in the **Inspector** window.

Clip Color/Track Color

Allows you to specify a color for the waveform of the selected clip or track.

Select Clip/Select Track

Allows you to select a clip or track.

Edit Clip Name/Edit Track Name

Allows you to specify a name for the selected clip or track.

Pane Visibility

Allows you to show or hide panes in the **Inspector** window.
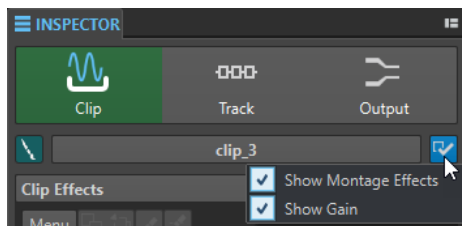
The following options are available:

- If you have selected **Clip**, you can **Show Montage Effects**, and **Show Gain**.
- If you have selected **Track**, you can **Show Clean**, **Show Enhance**, **Show Montage Effects**, and **Show Gain**.
- If you have selected **Output**, you can **Show Montage Effects** and **Show Gain**.

Clean (Only for Tracks)

The **Clean** pane contains a **DeHummer**, **DeNoiser**, and **DeEsser** to remove unwanted sounds and noises from your audio in real-time.

Fold/Unfold Clean Pane

Folds or unfolds the **Clean** pane.

Bypass All Effects Displayed Here

Bypasses any effect processing during playback and rendering.

DeHummer

DeHummer allows you to decrease power hum interference that is caused by a bad grounding or unreliable recording equipment. This is done by removing the corresponding frequencies from the audio.

The following parameters are available:

- **Reduction** allows you to specify the amount of the hum reduction.
- **Listen** allows you to listen to the signal that was removed from the audio material. This allows you to verify that you did remove the correct portions of the audio.
- **50 Hz** and **60 Hz** allow you to remove harmonic noise with a fundamental frequency at 50 or 60 Hz. These disturbing frequencies can be caused by electric noise due to badly shielded recording equipment, for example.

DeNoiser

DeNoiser allows you to remove noise from the audio material, for example, ambience sound.

The following parameters are available:

- **Reduction** allows you to specify the amount of the noise reduction.
- **Listen** allows you to listen to the signal that was removed from the original audio material. This allows you to verify that you did remove the correct portions of the audio.

DeEsser

DeEsser is a compressor that reduces excessive sibilance, primarily for vocal recordings.

For example, you can use it when close proximity microphone placement and equalizing lead to situations where the overall sound is just right, but where unwanted sibilants occur.

When recording a voice, the position of **DeEsser** in the signal chain is usually after the microphone pre-amp and before a compressor/limiter. This keeps the compressor/limiter from unnecessarily limiting the overall signal dynamics.

The following parameters are available:

- **Reduction** allows you to specify the amount of the sibilance reduction.
- **Listen** allows you to listen to the signal that was removed from the original audio material. This allows you to verify that you did remove the correct portions of the audio.
- **Character** allows you to specify the frequency on which the **DeEsser** is applied. A low **Character** setting is generally used for low male voices, for example. Higher **Character** settings generally apply to higher voices of females or children, for example.
- The **Reduction** meter shows how much the **DeEsser** is working.

Enhance (Only for Tracks)

The **Enhance** pane contains the **Voice Exciter**, **Reverb**, **EQ**, and **Maximizer** that allow you to increase the clarity, expression, and deepness of your audio in real-time.

Fold/Unfold Enhance Pane

Folds or unfolds the **Enhance** pane.

Bypass All Effects Displayed Here

Bypasses any effect processing during playback and rendering.

Voice Exciter

Voice Exciter allows you to add upper harmonics and increase clarity and intelligibility of your voice recordings.

The following parameters are available:

- **Amount** allows you to specify the amount of the effect.
- **Clarity** allows you to increase the clarity and intelligibility of your voice recording.

Reverb

Reverb allows you to add more room and space to recordings that sound a bit lifeless.

The following parameters are available:

- **Size** allows you to specify the room size.
- **Mix** allows you to set the level balance between the dry signal and the wet signal.

EQ

The three band **EQ** allows you to tame or boost the **Low**, **Mid** and **High** frequency ranges. An additional **Low Cut** filter allows you to cut the low end below 30 Hz for even more clarity.

The EQ bands have the following specifications:

- **Low**: low-shelf, frequency 250 Hz, 12 dB/octave
- **Mid**: peak, frequency 1500 Hz, Q 1, 12 dB/octave
- **Hi**: high-shelf, frequency 5000 Hz, 12 dB/octave

Maximizer

Maximizer allows you to add loudness and punch to your recording while making sure that the signal does not exceed -1 dB. The **Optimize** dial lets you specify how much compression is applied.

Montage Effects

The **Montage Effects** pane allows you to add and manage effect plug-ins.

Fold/Unfold Effects Pane

Folds/Unfolds the **Effects** pane.

The following options are available on the **Menu** pop-up menu:

Remove Selected Plug-ins

Removes the selected plug-in from the **Montage Effects** list.

Remove All Plug-ins

Removes all plug-ins from the **Montage Effects** list.

Copy

Copies the selected plug-in and its settings to the clipboard.

Copy All

Copies all plug-ins and their settings to the clipboard.

Paste (Insert)

Inserts the plug-in that was copied to the clipboard before the first selected slot. If no slot is selected, the plug-in is inserted at the end of the plug-in list.

Paste (Replace)

Replaces the selected plug-in with the plug-in that was copied to the clipboard. If no slot has been added, a new slot is created.

Close All Windows

Closes all plug-in windows related to this audio montage.

Plug-in Map

Opens the **Plug-in Map** dialog that displays all plug-ins that are used in the audio montage and the clips and tracks that are using them.

Add Effect

Allows you to add an effect.

The following options are available on the toolbar of the **Montage Effects** pane:

Copy

Copies the selected plug-in and its settings to the clipboard.

Paste

Inserts the plug-in that was copied to the clipboard before the first selected slot. If no slot is selected, the plug-in is inserted at the end of the plug-in list.

Remove Selected Plug-ins

Removes the selected plug-ins from the **Montage Effects** list. You can **Ctrl/Cmd**-click the plug-ins to select the plug-ins that you want to remove.

Remove All Plug-ins

Removes all plug-ins from the **Montage Effects** list.

Effects List

The effects list displays the effect plug-ins of the selected clip, track, or montage output. In the list, you can replace effect plug-ins, change the effect order, and edit the **Tail** of effects.
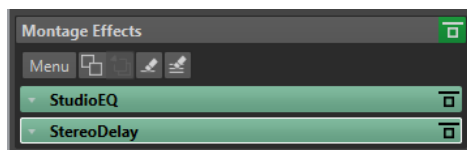
Tail

If you click the arrow to the left of the plug-in name, you can specify the tail value for the plug-in.

Some effects, such as reverb and delay, produce audio tails. This means that the effect sound continues after the clip sound ends. For example, if you add echo to a clip without specifying a tail value, the echo effect is muted as soon as the clip ends. Set the tail length so that the effect is allowed to decay naturally. If you add another plug-in to the clip that also produces a tail, there is no need to set a separate tail value for this plug-in, unless you want the decay to sum up. The overall tail length for the clip is the sum of the tail of each plug-in. The maximum tail setting is 30 seconds.

Effect Name

Click the effect name to open the corresponding effects window. Right-clicking an effect name opens the **Plug-ins** menu where you can select a new effect.

Latency

If a plug-in has latency, the latency value is displayed next to the plug-in name.
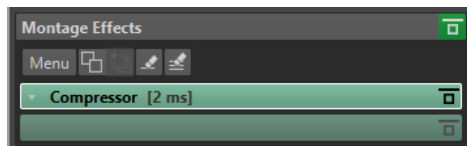
Presets

Allows you to save and restore plug-in presets.

Effect Options

Opens the **Plug-ins** menu where you can select a new plug-in and remove the plug-in.

Bypass Effect

Bypasses the plug-in during playback and optionally during rendering. The signal is still processed by the plug-in, but is not injected in the audible stream.

Gain

In this section, you can edit **Gain** and **Pan** settings for each clip and track. You can also set the global gain for the montage output.

Fold/Unfold Gain Pane

Folds or unfolds the **Gain** pane.

Reset Gain to 0 dB

Resets the gain to 0 dB.

Gain

Allows you to set the gain for the effects.

If you select **Output** at the top of the **Inspector** window, you can set the global gain for the active audio montage.

Pre/Post Effect (Montage Output only)

Allows you to apply the gain before or after the montage output, depending on the **Pre/Post Effect** setting. **Pre Effects** is the default setting.

Gain Range

Allows you to increase the slider precision. If the active gain is outside a certain gain range, you cannot select the gain range.

Lock Fader

If this option is activated, you cannot change the fader with the mouse.

Pan Dial (Clip and Track only)

Allows you to set the pan for the clip effects and the track effects.

Reset Pan to Center (Clip and Track only)

Resets the pan to the center position.

Pan Mode (Clip and Track only)

Allows you to select a pan mode different than 0 dB or mute to compensate a dB drop when the signal is panned hard left or right.

RELATED LINKS
Pan Laws on page 226
Presets on page 76
Showing/Hiding Panes in the Inspector Window on page 239
Envelopes for Clips on page 221

Showing/Hiding Panes in the Inspector Window

You can show or hide panes in the **Inspector** window to focus on the panes that you need.

PROCEDURE

1. In the **Inspector** window, select the section for which you want make your pane visibility settings. That is, **Clip** or **Track**.

2. Click **Pane Visibility**.
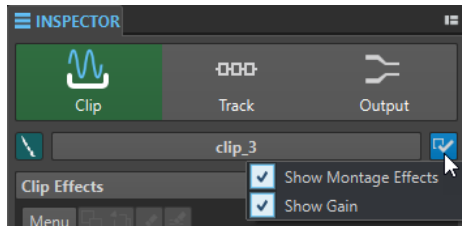
3. Select the panes that you want to show. The following options are available:

- **Show Montage Effects** allows you to show/hide the **Effects** pane.

- **Show Gain** allows you to show/hide the **Gain** pane.

RELATED LINKS
Inspector Window on page 234

Adding Effects to Tracks, Clips, or to the Montage Output

You can add effect plug-ins to every track and clip of the audio montage, and to the output of the audio montage.

RELATED LINKS
Adding Effects via the Inspector Window on page 240
Additional Ways of Adding Effects on page 241
Removing Effects from Tracks, Clips, or the Montage Output on page 241

Adding Effects via the Inspector Window

PROCEDURE

1. Open an audio montage.

2. In the **Inspector** window, click **Clip**, **Track**, or **Output**.

3. In the **Effects** pane, right-click an effect slot and select a plug-in.

RESULT

The selected plug-in opens in a window.

NOTE

You can add plug-ins during playback. However, if you add a plug-in with a latency larger than zero, we recommend that you stop and restart playback to avoid timing discrepancies. In addition, a small number of VST plug-ins may change its latency depending on the parameter settings. If that is the case, make sure to stop and restart playback after the latency is changed.

RELATED LINKS
Inspector Window on page 234
Effects for Tracks, Clips, and the Montage Output on page 233

Additional Ways of Adding Effects

You can add effects not only in the **Inspector** window but also via the track control area and via the wave window.

- To add an effect to a track, click **Add Effects** in the track control area for stereo and mono track and select an effect from the menu.
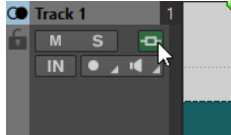
- To add an effect to a clip in the montage window, right-click the clip name, select **Add Effect**, and select an effect from the menu.
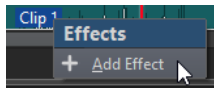
RELATED LINKS
Track Control Area for Stereo and Mono Tracks on page 179
Inspector Window on page 234
Effects for Tracks, Clips, and the Montage Output on page 233

Removing Effects from Tracks, Clips, or the Montage Output

PROCEDURE

1. Open an audio montage.

2. In the **Inspector** window, specify where you want to remove the effects by selecting **Clip**, **Track**, or **Output**.

3. In the **Montage Effects** pane, do one of the following:
   - To remove an effect, right-click the effect and select **Remove Plug-in**.
   - To remove all effects, click **Menu** and select **Remove All Plug-ins**.

RESULT

The effect is removed from the effect slot.

RELATED LINKS
Adding Effects to Tracks, Clips, or to the Montage Output on page 240
Inspector Window on page 234

Rearranging the Order of Effects

The order of the effects in the list determines the processing order.

PROCEDURE

1. Open an audio montage.

2. In the **Inspector** window, in the effects list, drag the effect that you want to rearrange to another position.

Copying Effect Settings to Tracks, Clips, or the Montage Output

You can copy the effect and its settings of a track, a clip, or the montage output to other tracks, clips, or the montage output of the same or another audio montage.

PROCEDURE

1. Open an audio montage.

2. In the **Inspector** window, do one of the following:

   - Select the effect from which you want to copy the settings and select **Menu** > **Copy**.

   - Right-click the effect from which you want to copy the settings and select **Copy**.

   - To copy all effects and its settings, click **Menu** > **Copy All**.

3. Do one of the following:

   - To paste the effect settings to a new slot, select **Menu** > **Paste (Insert)**.

   - To replace an existing effect, select the effect, and select **Menu** > **Paste (Replace)**.

Undoing Effect Changes

You can undo/redo changes to the effect settings. However, WaveLab Elements only registers the changes when you close the plug-in window or select another tab in the plug-in window.

PROCEDURE

1. In the plug-in window, click another window to lose focus of the plug-in in which you want to undo the settings.

2. Go back to the plug-in in which you want to undo the settings.

3. On the command bar of the **Audio Montage** window, click **Undo** or **Redo**.
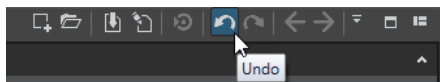
Setting Pan and Gain for Effects

You can set the **Pan** and the **Gain** of the effects for each clip and track individually.

PROCEDURE

1. Open an audio montage.

2. In the **Inspector** window, click **Clip** or **Track**.

3. Adjust the **Pan** and the **Gain**.

   For clips, the **Gain** is applied post-effect.
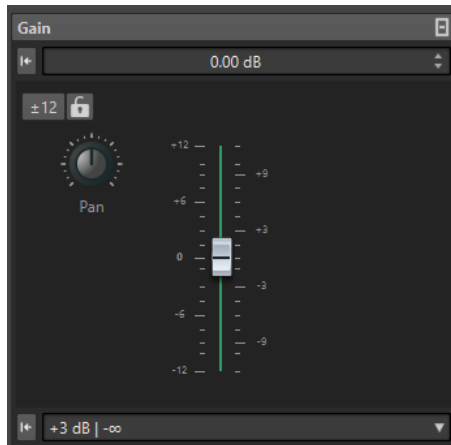
Gain settings for clips

RELATED LINKS

Setting the Global Gain for Effects

You can set a global gain for the montage output effects of your audio montage and apply it before or after the montage output effects.

PROCEDURE

1. Open an audio montage.

2. In the **Inspector** window, click **Output**.

3. In the **Gain** pane, adjust the global gain.
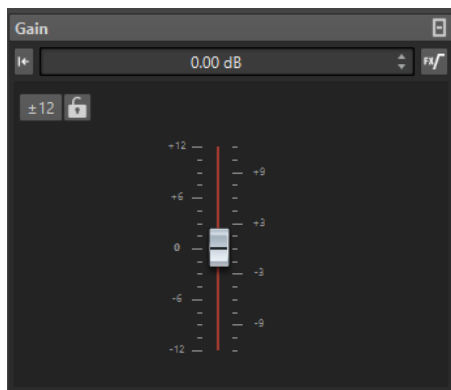
Gain settings for montage output effects

4. Click **Pre/Post Effects** to apply the global gain before or after the montage output effects.

Global gain before montage output effects

Global gain after montage output effects

If you use a dithering plug-in, set the gain to be pre-master.

RELATED LINKS

Plug-in Windows for Audio Montages

In plug-in windows for audio montages, you can display the effect plug-ins that are used for a track, clip, or the montage output.

Single plug-in window

When you add a new effect plug-in to a track, a clip, or the montage output, the plug-in window opens automatically. In the plug-in window, the effects are displayed in a plug-in chain by default. To change the processing order of the effects, you can drag each effect to a new position in the chain.

Plug-in Chain

If **Use Plug-in Chain Window** is activated on the **Settings** pop-up menu of the **Master Section**, the effects of the active audio file are displayed in a plug-in chain at the top of the plug-in window.

You can right-click a plug-in tab or an empty tab to select a new plug-in for the slot.

Bypass Effect

If this option is activated, the plug-in is bypassed during playback and rendering. However, bypassing effects still consumes CPU power during playback. See also: Bypassing Effects vs. Switching Effects Off

Switch Effect On/Off

If you deactivate a plug-in, it is excluded from both playback and rendering. See also: Bypassing Effects vs. Switching Effects Off

Presets

Opens a menu to save/load presets for this plug-in.

RELATED LINKS
Opening the Plug-in Window on page 245
Plug-in Windows for Master Section on page 270
Bypassing Effects vs. Switching Effects Off on page 271

Opening the Plug-in Window

You can open the plug-in window from different locations.

- To open the plug-in window from the **Inspector** window, click the plug-in in the **Effects** list.
- To open the plug-in window from the **Master Section** window, click the plug-in in the **Effects** list.
- To open the plug-in window for a clip from the montage window, right-click a clip, and select **Edit Plug-ins**.
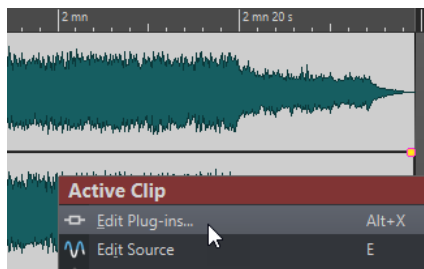
You can also right-click the clip name and select a plug-in.
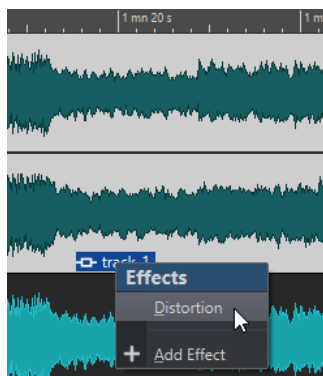
- To open the plug-in window for a track, click the **Track Effects** button in the track control area and select a plug-in.
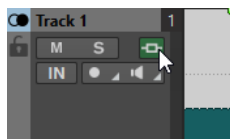
RELATED LINKS
Plug-in Windows for Audio Montages on page 244
Inspector Window on page 234
Master Section Window on page 266
Active Clip Menu on page 214
Track Control Area on page 178

Adding Effects From Within the Plug-in Window

Effects that are added to a clip, track, or the montage output in the **Inspector** window are automatically displayed in the plug-in window. However, you can also add effects to a track or a clip from within the plug-in window.

PROCEDURE

1. Open the plug-in window for the clip, track, or montage output to which you want to add an effect.

2. In the plug-in window, click **Add Plug-in**.

3. Select an effect from the menu.

    The effect is added at the end of the plug-in chain.

4. Optional: If you want to move the added effect in the plug-in chain, drag it to another position.

Changing Effects From Within the Plug-in Window

PROCEDURE

1. Open the plug-in window for the clip, track, or montage output for which you want to change an effect.

2. Click the plug-in menu icon, and select a new effect from the menu.
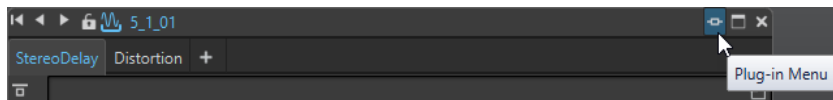
3. Optional: If you want to move the changed effect in a plug-in chain window, drag it to another position.

RELATED LINKS
Plug-in Windows for Audio Montages on page 244
Adding Effects From Within the Plug-in Window on page 246

Switching Between Track, Clip, and Montage Output Effects in Plug-in Windows

In the plug-in window, you can switch between the effect chains of clips, tracks, and the montage output.

●   To select an effect in the plug-in window, click its name.

●   To skip through the clips of the active audio montage and display their effects, use the left and right arrow icons.
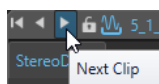
●   To skip through the tracks of the active audio montage and display their effects, use the up and down arrow icons.
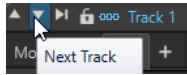
- When using one plug-in window for both clips and tracks of an audio montage, you can switch between the plug-ins of the active clip or the track that contains the active clip by clicking the **Show Clip Plug-ins** or **Show Track Plug-ins** icons.
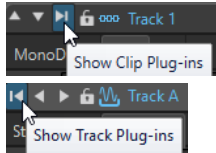
- To lock a plug-in window, activate **Lock Window**. If this option is activated, and you select another track or clip, another plug-in window opens. If this option is deactivated, and you select another track or clip, the effects are displayed in the same plug-in window.

RELATED LINKS
Plug-in Windows for Audio Montages on page 244

Closing All Plug-in Windows

PROCEDURE

1. Open an audio montage.

2. Select **Tool Windows** > **Inspector**.

3. In the **Inspector** window, select **Menu** > **Close All Windows**.

RELATED LINKS
Inspector Window on page 234

CD Window

The **CD** window displays the clips of the active audio montage, and lets you write the audio montage to an audio CD.
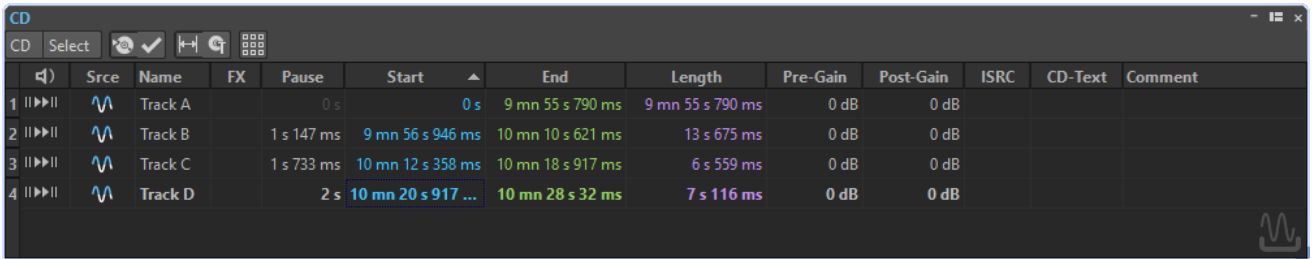
NOTE

Each clip in the audio montage corresponds to a CD track in the **CD** window.

You can also adjust pauses between clips, check the conformity to the Red Book standards, add and edit CD-Text, and add UPC/EAN and ISRC codes. When selecting a clip in the montage window, the corresponding clip is highlighted in the **CD** window.

- To open the **CD** window, open an audio montage and select **Tool Windows** > **CD**.

CD												
◀)	Srce	Name	FX	Pause	Start ▲	End	Length	Pre-Gain	Post-Gain	ISRC	CD-Text	Comment
1 �II▶▶II	∿	Track A		0 s	0 s	9 mn 55 s 790 ms	9 mn 55 s 790 ms	0 dB	0 dB			
2 II▶▶II	∿	Track B		1 s 147 ms	9 mn 56 s 946 ms	10 mn 10 s 621 ms	13 s 675 ms	0 dB	0 dB			
3 II▶▶II	∿	Track C		1 s 733 ms	10 mn 12 s 358 ms	10 mn 18 s 917 ms	6 s 559 ms	0 dB	0 dB			
4 II▶▶II	∿	**Track D**		2 s	10 mn 20 s 917 ...	10 mn 28 s 32 ms	7 s 116 ms	0 dB	0 dB			

Track List

Play Pre-Roll

II▶

Plays back the corresponding track from the start with a pre-roll.

You can also press **Alt** and click **Play Pre-Roll** to play back the corresponding track from the start with a short pre-roll.

Play

▶II

Plays back the corresponding track from the start.

You can also hold **Ctrl/Cmd** and double-click a CD track start marker triangle to start playback from the marker position.

Name

Shows the track name. To change the name, double-click in the corresponding cell, and enter a new value.

FX

Displays whether the corresponding clip uses effects.

Pause

Shows the pause between two tracks.

Start

Shows the start position of the track.

End

Shows the end position of the track.

Length

Shows the time value from the CD track start position to the corresponding end or splice marker.

Pre-Gain

Lets you set the pre-effect gain for the clip.

Post-Gain

Lets you set the post-effect gain for the clip.

ISRC

Allows you to enter an ISRC code. To change the code, double-click the corresponding cell, and enter a new value.

CD-Text

Allows you to specify the CD-Text. To change the CD-Text, double-click the corresponding cell, and enter a new value.

Comment

Allows you to enter a comment by double-clicking a cell.

CD Menu

Write Audio CD

Opens the **Write Audio CD or DDP** dialog that allows you to write a CD.

Check CD Conformity

Verifies that the settings for the audio montage are in accordance with the Red Book standard.

Adjust Pauses between Clips

Opens a dialog where you can adjust the pauses between clips. The following options are available:

- **Set Specific Pause Time**
- **Round Existing Pauses to Closest Second**

Edit CD-Text

Opens the **CD-Text Editor** dialog that allows you to enter descriptive text for the tracks that are written on CD.

NOTE

This option is only available if you have selected the mode **Stereo** in the **Audio Montage Properties**.

Assign UPC/EAN Code

Opens the **UPC/EAN Code** dialog where you can assign a UPC/EAN code to a clip.

Follow Playback

If this option is activated and you play back an audio montage, a green bar next to the CD track name indicates the CD track that is played back.

Select Menu

This menu allows you to select clips. The following options are available:

- **Select All Clips**
- **Select Clips Located Before the Cursor (on Selected Track)**
- **Select Clips Located After the Cursor (on Selected Track)**
- **Deselect All Clips**

RELATED LINKS

Creating Audio CD Tracks From Clips

You can use the **Check CD Conformity** option to check whether the audio montage is ready for writing to audio CD.

PREREQUISITE

Make sure that the audio montage contains the material that you want on the audio CD. CD tracks must have a length of at least 4 seconds.

PROCEDURE

1. Audition the tracks in the **CD** window, and make corrections if necessary.

2. Optional: In the **CD** window, select **CD** > **Check CD Conformity**.

   - If a warning message appears, make corrections and check the CD conformity again.
   - If no warning message appears, the audio montage is ready to be written to an audio CD.

RELATED LINKS
CD Window on page 247

Mixing Down – The Render Function

The **Render** function allows you to mix down the whole audio montage or a region of it to a single audio file.

A mixdown is necessary to produce an audio file from the audio montage.

RELATED LINKS
Rendering in the Master Section on page 278

Rendering Audio Montages to Audio Files

You can render regions of an audio montage or whole audio montages to a single audio file.

PREREQUISITE

Set up your audio montage.

PROCEDURE

1. In the **Audio Montage** window, select the **Render** tab.

2. In the **Source** section, specify which part of the audio file you want to render.

3. In the **Result** section, activate **Named File**.

4. In the **Output** section, click the **Format** field and click **Edit**.

5. Make your settings in the **Audio File Format** dialog.

6. Click **OK**.

7. Optional: Make additional settings on the **Render** tab.

8. In the **Render** section, click **Start Rendering**.

RESULT

The audio montage is rendered.

RELATED LINKS
Mixing Down – The Render Function on page 250
Audio File Format Dialog on page 124

Loudness Meta Normalizer

This tool is a key mastering component to ensure that all songs get the same loudness and to prevent clipping. It allows you to adjust the loudness of each clip in the audio montage so that they all have the same loudness. It is also possible to adjust the loudness of the audio montage mixdown as well as the loudness at the **Master Section** output.

This tool operates on gains. It does not affect the underlying audio files or use any audio compressor.

If it is not possible to modify the loudness of a particular clip without clipping, the level of the other clips is reduced so that all clips still achieve the same loudness. This does not happen if the **Ignore Peaks** option on the **Peaks** pop-up menu in the **Loudness Meta Normalizer** dialog is selected.

To avoid clipping at the **Master Section** stage, you can limit the mixdown output of the audio montage before it goes into the **Master Section** and/or the **Master Section** output.

NOTE

- The audio path in the audio montage uses 64-bit floating point processing. You can therefore overload it, for example, use levels above 0 dB in clips, without causing clipping in the signal path. The only section of the audio path that can introduce clipping is the output of the **Master Section** or the output of the audio montage. Both of these issues can also be solved by the **Loudness Meta Normalizer**.
- Because loudness requires several seconds of audio to be correctly calculated, this tool should not be used for very short clips (under 3 seconds).

Loudness Meta Normalizer Dialog

In this dialog, you can adjust the loudness of each clip in the audio montage so that they get the same loudness. You can also adjust the whole output.

- To open the **Loudness Meta Normalizer** dialog, select the **Edit** tab in the **Audio Montage** window, and click **Meta Normalizer** in the **Loudness** section.

Clips, Master Section Output, and Audio Montage Output

- If **Clips** is activated, the gain settings of all clips in the audio montage are adjusted individually so that all clips play back at equal loudness.
- If **Audio Montage Output** is activated, the gain setting of the audio montage is modified so that the audio montage mixdown matches a specific loudness.
- If **Master Section Output** is activated, the **Master Section** gain is adjusted so that the audio montage mixdown that is processed through all **Master Section** plug-ins matches a specific loudness. The audio montage itself is not modified by this operation.

Match loudness menu

Select whether the audio montage output should match a specific loudness. The following options are available:

- **Do Not Change Loudness**
- **Match Loudest Clip** (for clips only)
- **Match Loudness of Active Clip** (for clips only)
- **Equalize Peak Levels** (for clips only)

  The highest peak is used as reference.

Peaks menu

Select whether WaveLab Elements should limit the sample values (digital peaks), or ignore the peaks.

Maximum Peak

Determines the maximum peak value that must not be exceeded.

Force Equal Loudness

If **Limit True Peaks** or **Limit Digital Peaks** is selected, some clip might not reach the required gain for the reference loudness. In that case, activate **Force Equal Loudness** to reduce the loudness of the clip that is used as a reference to achieve equal loudness across all clips.

Additional Options

Exclude Audio Montage Effects

If this option is activated, audio montage effects are not taken into account when you use the **Loudness Meta Normalizer**.

This option also affects the **Pre-Gain** and **Post-Gain** options in the **CD** window.

● If **Exclude Audio Montage Effects** is activated, the **Loudness Meta Normalizer** changes the **Pre-Gain** value of the clips.

● If **Exclude Audio Montage Effects** is deactivated, the **Loudness Meta Normalizer** changes the **Post-Gain** value of the clips.

Only Selected Clips

If this option is activated, only the selected clips are processed with the **Loudness Meta Normalizer**.

Notes Window

This window allows you to enter notes about the current audio montage session.

● To open the **Notes** window, open an audio montage and select **Tool Windows** > **Notes**.
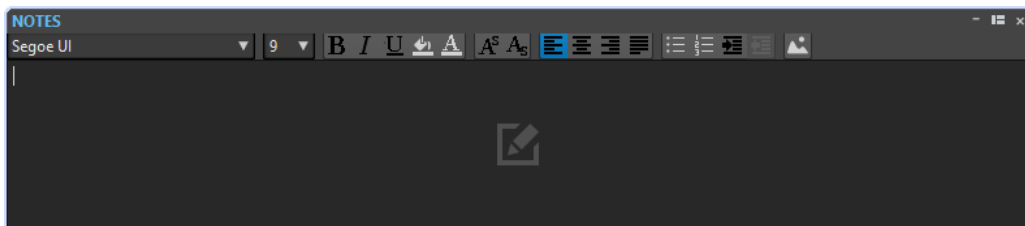
You can enter the text directly in this window and use the standard HTML text editor controls to format the text, and to add images and lists. The notes are saved with the audio montage.

Importing Audio CDs

You can import audio CD files. The imported audio CD opens as an audio montage.

PROCEDURE

1. Select **File** > **Import**.

2. Click **Audio CD**.

3. In the File Explorer/macOS Finder, select the Basic Audio CD file that you want to import and click **Import**.

RESULT

The imported audio CD opens as a new, untitled audio montage that contains all the audio tracks that are saved in the audio CD file.

Recording

You can record audio in the **Audio Editor** and in the **Audio Montage** window.

You can use the following recording methods:

- In the **Audio Editor**, you can record files with multiple options via the **Recording** dialog.
- In the **Audio Montage** window, you can record multiple audio montage tracks simultaneously.
- You can record while hearing the effects when monitoring the input signal.

RELATED LINKS

Recording in the Audio Editor

Before you start recording, set up the **Recording** dialog.

PROCEDURE

1. In the **Audio Editor**, click the **Record** button, or press ***** on the numeric key pad.
   The **Recording** dialog opens.
2. In the **File to Create** section in the **Recording** dialog, open the pop-up menu, and select whether you want to record a named file or a temporary file.
3. Select a file name and the location where you want to save your file.
4. Select the audio format by doing one of the following:
   - Click the down arrow button to select a preset audio format.
   - Click the audio format text to open the **Audio File Format** dialog, select the format, and click **OK**.
5. Select whether you want to record to an audio file or an audio montage track, by selecting one of the following options:
   - **Create New Audio File Window**
   - **Add to Active Audio File**
   - **Add to Active Track of Montage**
6. Select whether you want to show the **Level** or the **Spectrum** display while recording.
7. Optional: Make further settings in the **Options** section, and on the **Options** and **Values** tabs.
8. Click **Record** to start recording.
   If you have selected one of the Auto-start options, the recording goes into **Pause** mode until the specified Auto-start criteria are met.
   The background of the **Recording** dialog turns red to indicate that you are recording.
9. Optional: Pause the recording by clicking the **Pause** button.
10. Optional: Drop markers during recording by clicking the drop marker buttons.
11. When you have finished recording, click **Stop**.

12. Optional: If you want to record another take, click **Record** again.

Recording Dialog

In this dialog, you can make recording settings and start recording an audio file.

To open the **Recording** dialog, do one of the following:

- Open the **Audio Editor**, and click **Record** on the transport bar.
- In other workspaces, Alt/Opt -click **Record** on the transport bar.
- In the **Audio Montage** window, press Alt/Opt - R .
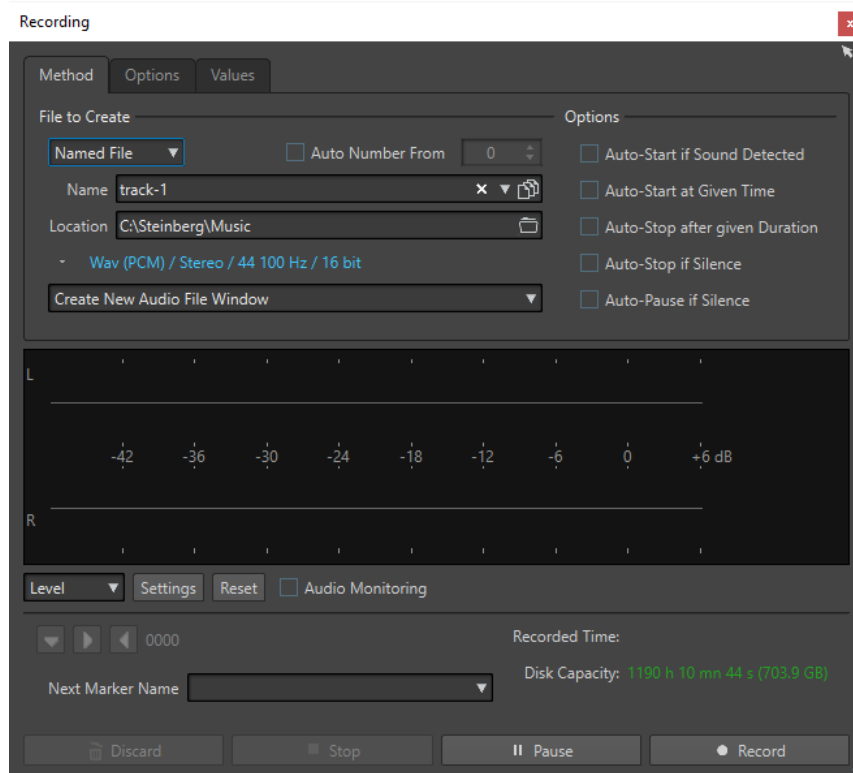
Main Buttons

Discard

Stops recording and deletes anything recorded so far.

Stop

Stops recording.

Pause

Pauses recording.

Record

Starts recording. Depending on the recording options, **Pause** mode is activated.

Method Tab

On this tab, you can define options for starting, stopping, and pausing the recording automatically. You can select an input device and choose to start a recording at a specific time or stop if after a specific duration.
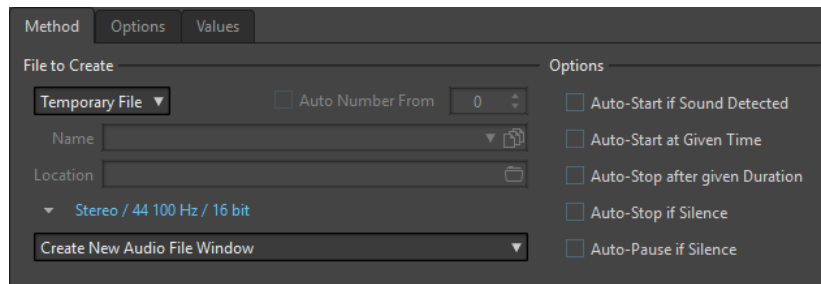
File to Create

Specify whether you want to record a temporary file to be saved later, or record to a file with a specific name and location.

Auto Number From

If this option is activated and you record multiple files, increasing numbers are added to the file names of the files.

Name

The name of the file to be written, without the path. When typing, all files in the selected folder that start with the same letters are displayed. To display all files in the selected folder, click the list icon.

Location

Specifies the folder where you want to save the recording.

Audio File Format

Opens the **Audio File Format** dialog, where you can specify the file format.

Location of the Recording

Allows you to specify where the audio is recorded:

- If **Create New Audio File Window** is selected, the audio is recorded in a new audio file window.

- If **Add to Active Audio File** is selected, the audio is recorded in the active audio file window at the edit cursor position. If no audio file exists, a new one is created.

- If **Add to Active Track of Montage** is selected, the audio is recorded in an existing audio montage at the edit cursor position. If no audio montage exists, a new one is created.

Auto-Start if Sound Detected

If this option is activated, recording starts when the audio input level exceeds the threshold level specified on the **Values** tab.

Auto-Start at Given Time

If this option is activated, recording starts at a specified time. Specify the time on the **Values** tab.

Auto-Stop after Given Duration

If this option is activated, recording stops automatically after the duration specified on the **Values** tab.

Auto-Stop if Silence

If this option is activated, recording automatically stops when the audio input level drops below a specified threshold level and stays there for a specific amount of time. Specify the level and the duration on the **Values** tab.

Auto-Pause if Silence

If this option is activated, recording automatically pauses when the audio input level drops below a specified threshold level and stays there for a specific amount of time. Specify the level and the duration on the **Values** tab.

Options Tab

On this tab, you can make additional settings for the recording process.
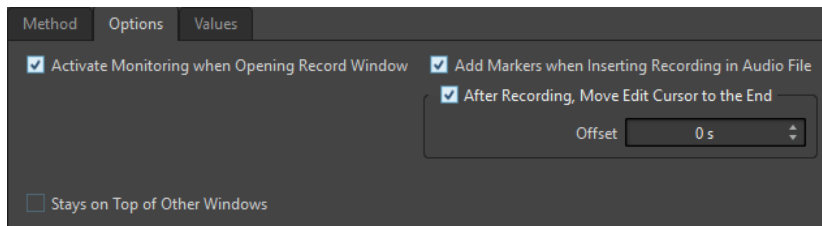
Activate Monitoring When Opening Record Window

If this option is activated, monitoring is active when the **Recording** dialog opens. If this option is deactivated, the meters and the audio thru are displayed when pressing **Record** or activating **Monitor**.

Add Markers when Inserting Recording in Audio File

If this option is activated and a recording is inserted into an audio file, markers are added encompassing the new samples.

After Recording, Move Edit Cursor at the End

If this option is activated, the edit cursor is moved to the end of the recording.

Values Tab

On this tab, you can define values for the various recording options.
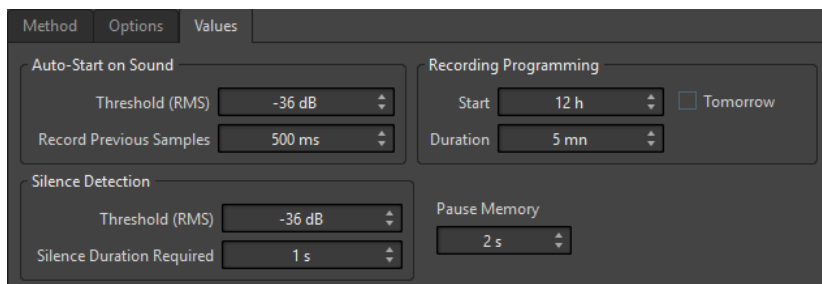
Auto-Start on Sound – Threshold (RMS)

Allows you to specify the sound level that triggers recording.

Auto-Start on Sound – Record Previous Samples

Allows you to include a short section of audio before the start point, to capture attacks, for example. It is only relevant if **Auto-Start if Sound Detected** is activated.

Silence Detection – Threshold (RMS)/Silence Duration Required

The threshold value used for the options **Auto-Stop if Silence** and **Auto-Create Markers at Silence Points**. It is used in conjunction with the **Silence Duration**

Required setting, so that recording is stopped or a marker is added if the input level stays below the threshold value for the specified duration.

Recording Programming – Start

Determines the time at which recording starts if **Auto-Start at given Time** is activated.

Recording Programming – Duration

Determines the length of the recording if **Auto-Stop after given Duration** is activated.

Recording Programming – Tomorrow

If this option is activated, you can specify a time on the next day (starting midnight).

Pause Memory

This is a safety buffer when you are using the **Pause** button. When you resume recording, this buffer is used to restore the last short section of audio before you deactivated the **Pause** button. This way, you can resume recording even if you deactivated the **Pause** button a bit too late.

Meter Display
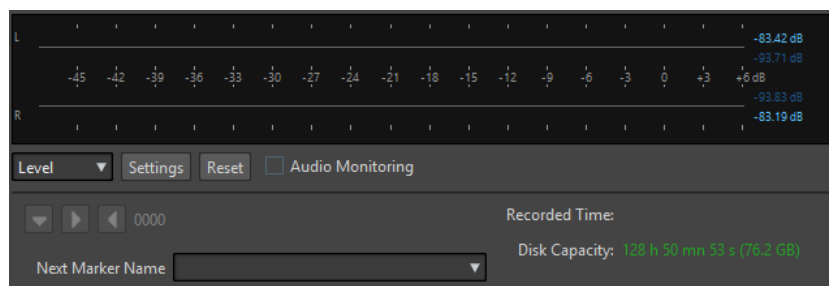
Level/Spectrum

Specifies whether to display the **Level Meter** or the **Spectrometer**.

Settings

If the **Level** display is selected, this button opens the **Level Meter Settings** dialog, where you can customize the meter settings.

If the **Spectrum** display is selected, a pop-up menu opens, where you can select the audio levels that the meter should display. The following settings are available for the **Spectrum** display:

- **Restrict to High Audio Levels**
- **Include Medium Audio Levels**
- **Include Low Audio Levels**

Reset

Resets the peak values.

Audio Monitoring

If this option is activated, the audio input is also sent to the output ports.

Marker buttons

Allow you to set markers during the recording.

Next Marker Name

Edit the name of the next marker to insert.

RELATED LINKS
[Audio File Format Dialog](#) on page 124

Level Meter and Spectrometer for Recordings

In the lower part of the **Recording** dialog, you find a meter display. This is useful for checking the input level and the frequency spectrum of the input signal.

You can activate the meters by activating the **Audio Monitoring** checkbox. This is done automatically if **Activate Monitoring when Opening Record Window** is activated on the **Options** tab in the **Recording** dialog.

To reset the meters, click the **Reset** button.

Level Meter

In the **Level Meter**, horizontal bars show the peak level (outer bars) and average loudness (VU, inner bars) of each channel. Values are also shown numerically. When you click the **Settings** button, the **Level/Pan Meter Settings** dialog opens.

Spectrometer

The **Spectrometer** shows a bar diagram, providing a continuous graphical representation of the frequency spectrum. From the **Settings** pop-up menu, you can choose whether to restrict to high audio levels, or to include medium or low audio levels.

RELATED LINKS

Disk Capacity Indicator

This indicator at the bottom of the **Recording** dialog indicates the approximate amount of available disk space on the hard disk specified in the **File to Create** section, or the hard disk that you have selected for temporary files.

NOTE

When there is less than 30 seconds of available hard disk space left, the disk capacity indication is displayed in red.

RELATED LINKS

Recording in the Audio Montage Window

Depending on your connected ASIO device, WaveLab Elements automatically detects the available input buses and creates the stereo and mono input buses in the **Audio Connections**.

RELATED LINKS

Automatically Assigning Input Buses for Recording (only for ASIO Devices)

Before you can start recording, you must assign input buses. If you are using an ASIO device, for example, a Steinberg UR interface, the input ports are automatically created.

NOTE

If you are not using an ASIO device, you must assign input buses manually.

PROCEDURE

1. Connect your device to your computer and start WaveLab Elements.

2. Select **File** > **Preferences** > **Audio Connections**.

3. Click **Recording**.

4. Make sure that your ASIO device is selected on the **Audio Device** menu.

   The input buses are assigned automatically.

5. Create an audio montage.

6. Create a mono or stereo track.

7. In the track control area, click **IN** and select the input bus for each track.

RESULT

WaveLab Elements is ready for recording.

RELATED LINKS

Assigning Input Buses for Recording Manually

Before you can start recording, you must assign input buses.

NOTE

If you are using an ASIO device, for example, a Steinberg UR interface, the input buses are created automatically.

PROCEDURE

1. Connect your device to your computer and start WaveLab Elements.

2. Select **File** > **Preferences** > **Audio Connections**.

3. Click **Recording**.

4. In the **Buses** list, select the bus that you want to use for recording.

5. Optional: To add more buses, click **Add Bus** and assign more input buses.

6. In the **Device Port** column, assign the input ports.

RESULT

WaveLab Elements is ready for recording.

RELATED LINKS

Automatically Assigning Input Buses for Recording (only for ASIO Devices) on page 260
Audio Connections Tab on page 16
Recording with Automatic File Properties on page 261
Recording with Custom File Properties on page 261
Recording on Multiple Tracks on page 262

Recording with Automatic File Properties

Recording with automatic file properties is the quickest way to start recording in the **Audio Montage** window.

The file name of the file that you want to record is generated automatically. The recorded file is saved in the data folder of the active audio montage. The bit resolution of the recorded file is the same as the bit resolution that is defined for temporary files.

PROCEDURE

1. In the montage window, select a track and click at the position where you want the recording to start.

2. On the transport bar, click **Record**.

3. To start recording, select an input bus in the **Audio Input** menu.

4. Do one of the following:

   - To stop recording, click **Stop** on the transport bar.

   - To stop and discard the recording, **Ctrl/Cmd** -click **Stop** on the transport bar. This deletes the recorded file.

RELATED LINKS

Assigning Input Buses for Recording Manually on page 260
Automatically Assigning Input Buses for Recording (only for ASIO Devices) on page 260
Track Control Area on page 178
File Properties for Recording Dialog on page 263

Recording with Custom File Properties

When recording in the **Audio Montage** window, you can specify the name, location, and bit resolution of the file that you want to record.

PROCEDURE

1. In the montage window, select a track and click at the position where you want the recording to start.

2. In the track control area, click **Audio Input** and select an input bus.

3. Right-click **Record** and click **File Properties for Recording**.
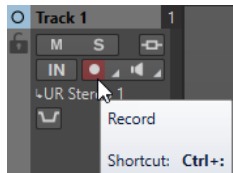
4. In the **File Properties for Recording** dialog, make your settings and click **Record Enable Track**.

   The track is now ready for recording.

5. On the transport bar, click **Record**.

6. Do one of the following:

   - To stop recording, click **Stop** on the transport bar.
   - To stop and discard the recording, **Ctrl/Cmd**-click **Stop** on the transport bar. This deletes the recorded file.

RELATED LINKS
Assigning Input Buses for Recording Manually on page 260
Automatically Assigning Input Buses for Recording (only for ASIO Devices) on page 260
Track Control Area on page 178
File Properties for Recording Dialog on page 263

Recording on Multiple Tracks

You can record on multiple audio montage tracks simultaneously.

PREREQUISITE
You have assigned input buses for recording.

PROCEDURE

1. In the montage window, click at the position where you want the recording to start.

2. Optional: Click **Monitor** to monitor your input signal and adjust its level.

3. Do one of the following:

   - If you want to record audio files with automatic file properties, click **Record** in the track control area and select an input bus.
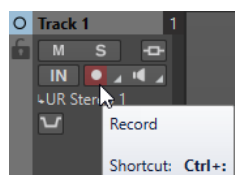
   - If you want to specify the file name, location, and bit resolution of the audio files that you want to record, right-click **Record** and click **File Properties for Recording**. In the **File Properties for Recording** dialog, make your settings and click **Record Enable Track**.

   The track is now ready for recording.

4. Optional: Repeat step 3 for all tracks that you want to record on.

5. On the transport bar, click **Record** to start recording.

6. Do one of the following:

- To stop recording, click **Stop** on the transport bar.

- To stop recording of a single track while recording several tracks at the same time, click **Record** in the track control area of the track.

- To stop and discard the recording, **Ctrl/Cmd** -click **Stop** on the transport bar. This deletes the recorded file.

File Properties for Recording Dialog

This dialog allows you to specify the file name, location, and bit resolution of the track that you want to record.

- To open the **File Properties for Recording** dialog, in the track control area, right-click **Record** and click **File Properties for Recording**.
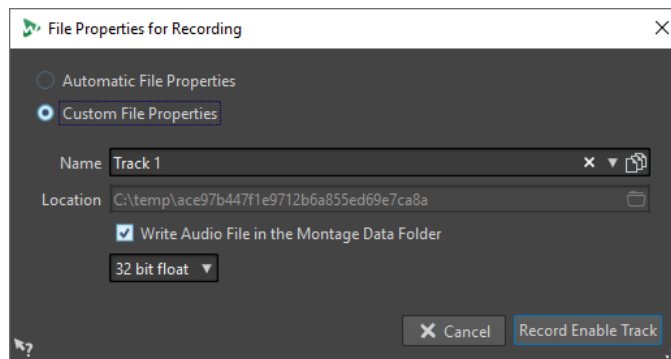
Automatic File Properties

If this option is activated, the file name of the file that you want to record is generated automatically. The recorded file is saved in the data folder of the active audio montage. The bit resolution of the recorded file is the same as the bit resolution that is defined for temporary files.

Custom File Properties

If this option is activated, you can specify the file name and location for the audio file that you want to record.

Write Audio File in the Montage Data Folder

If this option is activated, the recorded audio file is saved in the data folder of the audio montage. To specify a custom folder, deactivate this option.

Bit Resolution

Allows you to specify the bit resolution of the audio file that you want to record.

Input Monitoring

Input monitoring means listening to the input signal after it travels through the effects while preparing to record or while recording. This allows you to listen to the effects that your WaveLab Elements setup has on your input signal.

Depending on your effect chain, audio hardware, and drivers, the monitored signal can have latency.

You can choose to monitor the signal going through the audio montage and its effects, or you can use **Direct Monitoring**, which means listening directly to the input signal before it is sent through WaveLab Elements and its effects. **Direct Monitoring** has a lower latency than monitoring the input signal. **Direct Monitoring** is activated by default.

RELATED LINKS
Monitoring the Input Signal on page 264
Direct Monitoring on page 264

Monitoring the Input Signal

Monitoring the input signal allows you to monitor the signal going through the audio montage and its effects.

PREREQUISITE
You have set up your audio input buses.

PROCEDURE

1. Open an audio montage and set up your effects.
2. In the track control area for the track that you want to monitor, click **Select Audio Input** and select an audio input.
3. Click **Monitor**.

RESULT
You can monitor the input signal.

NOTE

The monitored signal is delayed according to the latency value which depends on your effect chain, audio hardware, and drivers.

RELATED LINKS
Track Control Area on page 178
Recording in the Audio Montage Window on page 259

Direct Monitoring

PREREQUISITE
You have set up your audio input buses.

PROCEDURE

1. Open an audio montage.

2. In the track control area for the track that you want to monitor, click **Select Audio Input** and select an audio input.

3. Right-click **Monitor** and activate **Direct Monitoring**.

RESULT

You can monitor the input levels of audio tracks.

RELATED LINKS
Recording in the Audio Montage Window on page 259

Dropping Markers During Recording

When you are recording, you can click the marker buttons to add markers to the recorded file.

PROCEDURE

1. Open the **Recording** dialog.

2. Optional: If you want to name the markers that you drop rather than using generic markers, enter the marker name in the **Next Marker Name** field.

3. Make your settings and start recording.

4. Select the type of marker that you want to drop.

- To drop a numbered generic marker, click the yellow marker button, or press **Ctrl/Cmd** - **M** .

- To drop numbered generic region start and end markers, click the white buttons, or press **Ctrl/Cmd** - **L** / **Ctrl/Cmd** - **R** .

RESULT

A marker is dropped each time that you click the marker button.

NOTE

If you insert two or more region start markers in a row with no region end markers in between, only the last of these start markers is kept. The same applies for region end markers.

RELATED LINKS
Recording Dialog on page 255

Master Section

The **Master Section** is the final block in the signal path before the audio is sent to the audio hardware, to an audio file, or to the audio meters. This is where you adjust the master levels, add effects, resample, and apply dithering.

The settings and effects in the **Master Section** are taken into account in the following cases:

- When playing back an audio file in the wave window.
- When playing back an audio montage.
  Note that the **Master Section** effects are global for all clips and tracks in an audio montage.
- When using the **Render** function.
- When writing a CD from an audio montage.

RELATED LINKS
Master Section Window on page 266
Rendering in the Master Section on page 278

Master Section Window

In this window, you can apply effect plug-ins, adjust the master level, apply dithering, and render the audio file or audio montage.

- To open the **Master Section** window, select **Tool Windows** > **Master Section**.
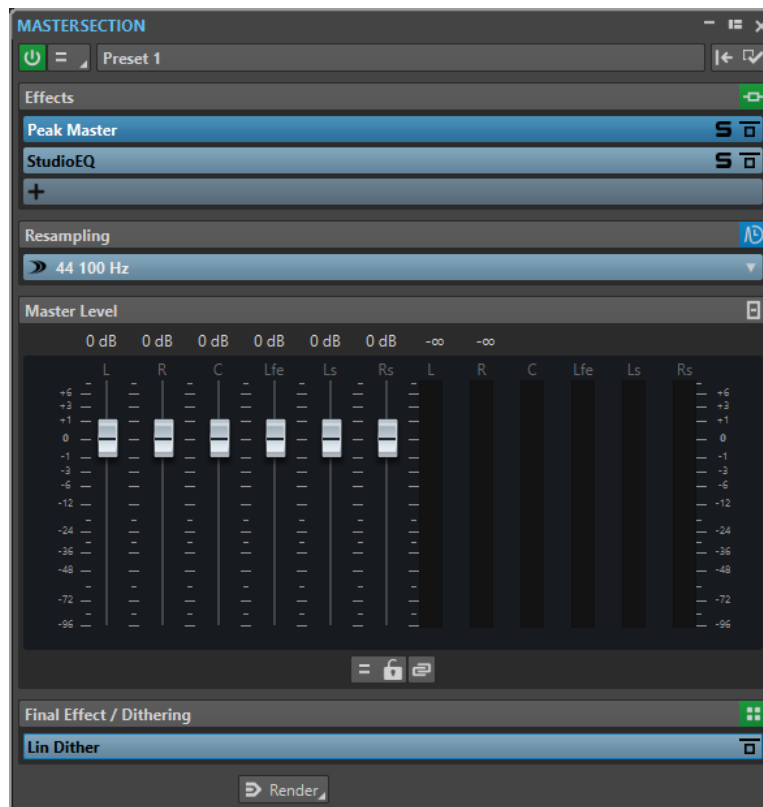
The **Master Section** consists of the following panes:

- **Effects**
- **Resampling**
- **Master Level**
- **Final Effect/Dithering**

RELATED LINKS
Effects Pane on page 269
Resampling Pane on page 273
Master Level Pane on page 274
Final Effect/Dithering Pane on page 276

Signal Path

The panes in the **Master Section** window correspond to the processing blocks of the **Master Section**.

The signal passes through these blocks from top to bottom:

1. Audio from WaveLab Elements
2. Effects

    Reordering the effect slots affects the signal path.

3. Resampling
4. Master Level
5. Final Effect/Dithering

    The meters in the Meter windows monitor the signal between the **Final Effect/Dithering** pane and the audio hardware or file on disk.

6. Audio hardware or file on disk

In the **Master Section**, the signal passes all plug-ins, even if some plug-ins are soloed. However, the sound is not affected by this because the muted plug-ins are bypassed from the playback process stream.

RELATED LINKS
Master Section Window on page 266

Master Section Tools

The tools and options at the top of the **Master Section** window allow you to make various settings before rendering the file, make bypass settings, and decide whether the playback signal passes the **Master Section**.
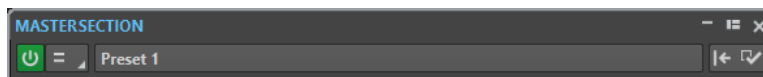
Bypass Master Section

If this option is activated, the **Master Section** is ignored during playback. However, rendering to file still takes into account all plug-ins.

Channel Selector

You can select a single channel cluster or all channel clusters of a multichannel audio file. If you select a single channel cluster, you can render it with the **Render in Place**

option at the bottom of the **Master Section** or play back the channel cluster via the front left/right audio ports or the mono audio port. You can set up the audio ports in the **Audio Connections** dialog.
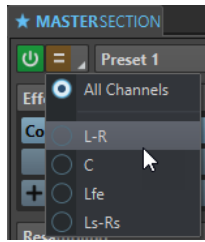
Presets

Lets you save and recall **Master Section** presets. The **Presets** pop-up menu offers additional options to save and load default banks and effects.

Reset Master Section

Removes all active effects from the slots and sets the master output to 0 dB.

Settings

Opens the **Settings** pop-up menu, where you can make settings for the **Master Section**.

Settings Pop-up Menu

Hide Plug-in Windows when Master Section is not Visible

If this option is activated, plug-in windows are hidden when the **Master Section** is not visible.

Show Plug-in Controls in the Plug-in Window

If this option is activated, the plug-in controls are displayed in plug-in windows.

Use Plug-in Chain Window

Shows all open plug-ins in the plug-in window as tabs, which allows you to quickly switch between the plug-ins.

Plug-in Windows Move with Master Section

If this option is activated, the plug-in windows are also moved when you move the floating **Master Section**.

Restore Last Configuration at Next Start-Up

If this option is activated, the plug-in configuration and fader positions in the **Master Section** are restored at the next WaveLab Elements start.

Section Visibility

Allows you to show or hide the **Master Section** sections.

Rearrange

Rearranges the **Master Section** according to the sample rate and channel configuration of the active audio file. The internal bus of the **Master Section** and any active plug-ins are configured accordingly.

This operation is performed automatically before playback or rendering. It is sometimes helpful to manually rearrange the **Master Section**, because some plug-ins do not accept a mono or stereo signal as input, or a given sample rate. In that case, clicking the button informs you about any problems, before playback or rendering.

This operation has no effect if playback is already in progress or if there is no active audio file.

Effects Pane

This pane in the **Master Section** allows you to add up to 8 effect plug-ins in series, and manage them.

You can fold/unfold or completely show/hide the **Effects** pane.

- To fold/unfold the **Effects** pane, click it.
- To show/hide the **Effects** pane, right-click a pane header, and activate/deactivate **Show Effects**.
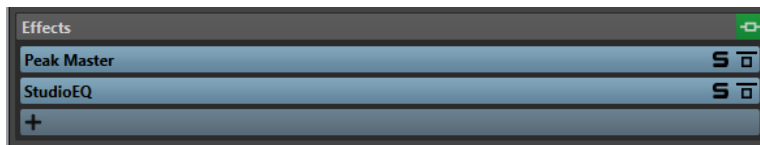
Fold/Unfold Pane

Expands or collapses the pane.

Bypass All Effects

Bypasses any effect processing during playback and when rendering.

Add Effect

Allows you to add an effect to an empty effect slot.

Effect plug-in name

Once you have added a plug-in to a slot, you can click the plug-in name to open and close the corresponding plug-in window.

Presets pop-up menu

Lets you save and recall preset settings. The **Presets** pop-up menu offers additional options to save and load default banks and effects.

Effect Options pop-up menu

Allows you to load another effect to the effect slot. Furthermore, the following options are available:

- **Remove Plug-in** removes the effect from the slot.
- **Shift All Plug-ins Down**/**Shift All Plug-ins Up** allows you to move the effects to another position.
- If **Active** is activated, the effect is active. If **Active** is deactivated, the effect is excluded from playback and rendering.

Solo (Bypass)

Soloes the plug-in.

Bypass Effect

Bypasses the plug-in during playback and optionally during rendering. The signal is still processed by the plug-in, but is not injected in the audible stream.

Supported Effect Plug-in Formats

WaveLab Elements supports WaveLab Elements-specific plug-ins, VST 2 plug-ins, and VST 3 plug-ins.

WaveLab Elements-specific Plug-ins

Some specific plug-ins are included in WaveLab Elements, for example, the **Resampler** plug-in.

VST Plug-ins

Steinberg's VST plug-in format is supported by a lot of programs and plug-in manufacturers. You find a number of VST plug-ins included with WaveLab Elements. Other plug-ins can be purchased separately from Steinberg or other manufacturers.

Setting Up Effects

The number of available effects in the **Effects** pane depends on the number and format of the plug-ins that you have installed.
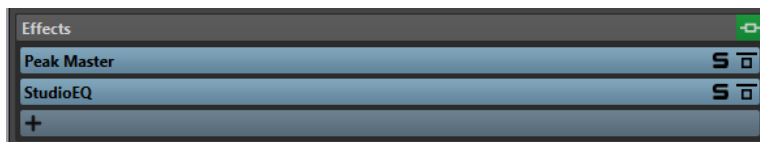
- To select an effect plug-in for a slot in the **Effects** pane, click the slot, and select an effect from the pop-up menu. When you have selected an effect, it is automatically activated, and its control panel opens.
- To turn off an effect, right-click the slot, and deactivate **Active**. To activate the effect, activate **Active** again.
- To remove an effect plug-in, right-click the slot and select **Remove Plug-in** from the pop-up menu.
- To show/hide a plug-in window, click the effect slot.
- To solo an effect, click its **Solo (Bypass)** button. This allows you to check the sound of that effect only. You can also bypass effects via their control panels.
- To change the order of the slots, that is, the order in which the signal passes through the effects, click a slot, and drag it to a new position.

Plug-in Windows for Master Section

In the plug-in windows of the **Master Section**, you can make settings for the effect plug-ins in the **Master Section**.

- To show a plug-in window, click the effect slot in the **Effects** pane of the **Master Section** window.
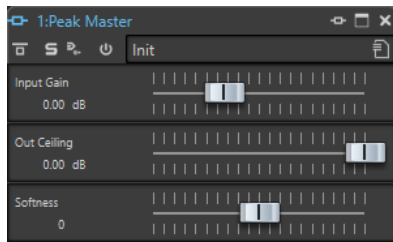
Plug-in Chain

If **Use Plug-in Chain Window** is activated on the **Settings** pop-up menu of the **Master Section**, the effects of the active audio file are displayed in a plug-in chain at the top of the plug-in window.

You can right-click a plug-in tab or an empty tab to select a new plug-in for the slot.

Bypass Effect

If this option is activated, the plug-in is bypassed during playback and rendering. However, bypassing effects still consumes CPU power during playback. See also: Bypassing Effects vs. Switching Effects Off

Solo (Bypass)

Soloes the plug-in.

Render in Place

Processes the audio in place. Bypassed plug-ins are excluded and the rendered audio is crossfaded at boundaries.

Switch Effect On/Off

If you deactivate a plug-in, it is excluded from both playback and rendering. See also: Bypassing Effects vs. Switching Effects Off

Presets

Opens a menu to save/load presets for this plug-in.

RELATED LINKS

Bypassing Effects vs. Switching Effects Off

In order to deactivate effects, you can bypass them or switch them off. However, there is a difference between bypassing effects and switching effects off when it comes to real-time processing, rendering, and playback behavior.

	Bypassing Effects	Switching Effects Off
What happens to real-time processing when you bypass an effect vs. when you switch an effect off?	You cannot hear the effect, but processing continues in the background and consumes CPU power.	The effect is not loaded and does not consume CPU power.

	Bypassing Effects	**Switching Effects Off**
What happens to the rendering process when you bypass an effect vs. when you switch an effect off?	The effect is not loaded and does not consume CPU power.	The effect is not loaded and does not consume CPU power.
What happens when you switch bypass on/off vs. when you switch effects on/off during playback?	Playback continues without glitches or interruptions.	Small interruptions can occur.

RELATED LINKS
Plug-in Windows for Master Section on page 270
Plug-in Windows for Audio Montages on page 244

Effect Plug-in Presets

WaveLab Elements comes with a number of factory presets for the included effect plug-ins. You can use them as they are or as a starting point for your own settings.

Third-party plug-ins can provide their own factory presets. To access the presets for an effect, click the **Presets** button in its control panel window or the **Presets** button for its effect slot. The available functions depend on the type of plug-in.
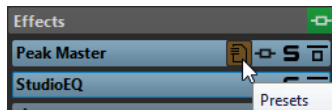
RELATED LINKS
Presets on page 76
Presets for VST 2 Plug-ins on page 272

Presets for VST 2 Plug-ins

VST 2 plug-ins have their own preset handling.

When you click the **Presets** button for this type of effect, a pop-up menu with the following options opens:

Load Bank/Save Bank

Loads and saves complete sets of presets. The file format is compatible with Cubase.

Load Default Bank/Save Default Bank

Loads the default set of presets or saves the current set of presets as the default bank.

Load Effect/Save Effect

Loads or saves a preset. This is also compatible with Cubase.

Edit Name of Current Program

Allows you to define a name for the preset.

Preset List

Allows you to select one of the loaded presets.

Resampling Pane

This pane in the **Master Section** allows you to resample the signal. With the **Resampling** plug-in, you can check the peaks before the master gain and meters, and before limiting and dithering.

You can fold/unfold or completely show/hide the **Resampling** pane.

- To fold/unfold the **Resampling** pane, click it.
- To show/hide the **Resampling** pane, right-click a pane header, and activate/deactivate **Show Resampling**.
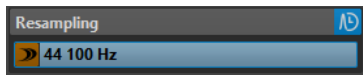
Fold/Unfold Pane

Expands or collapses the pane.

On/Off

Activates/Deactivates the resampling effect.

Use Preferred Sample Rate

If this option is activated, resampling matches the sample rate that is specified as the preferred sample rate on the **Audio Connections** tab.

NOTE

The sample rate is used for playback only. This allows you to play back sample rates that your audio device does not support.

Sample Rate menu

Allows you to select a sample rate.

Audio Driver Sample Rate

The sample rate of the audio driver is displayed at the bottom right of the **Master Section** window. The sample rate is displayed once you start playback or recording.

The value is either the sample rate of the audio file or audio montage that is played back or the sample rate that is set in the **Resampling** pane in the **Master Section**.
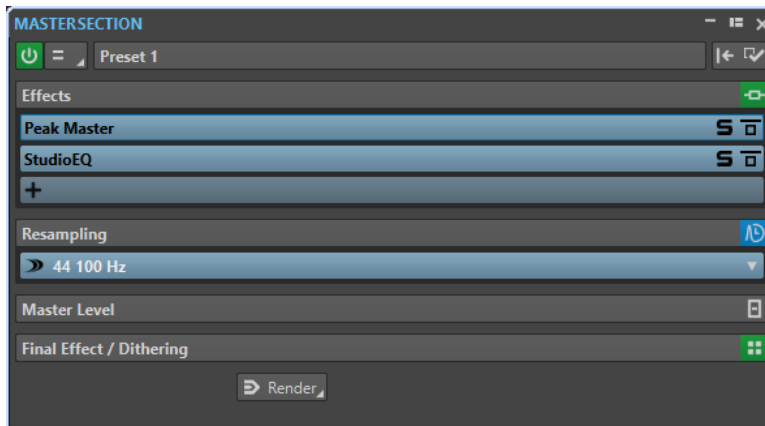
RELATED LINKS

Master Level Pane

This pane in the **Master Section** allows you to control the master level of the active audio file.
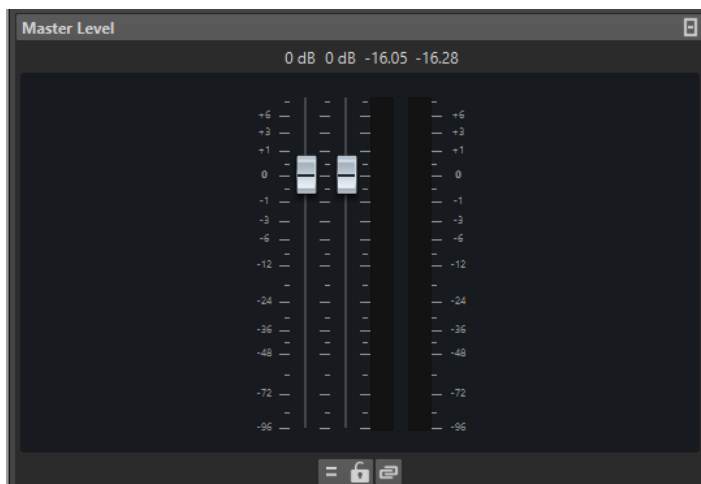
Faders

The faders in the **Master Level** pane govern the final output level. Use the faders to optimize the level of the signal that is sent to the audio hardware.

NOTE

It is important to avoid clipping, especially when mastering. Clipping is indicated by the clip indicators of the **Master Section**.

Meters

The **Master Section** meters show the signal level of the signal before dithering or any other plug-in that you have applied post-master fader.

Use these meters to get an overview of the signal levels. The numeric fields above the faders show the peak levels for each channel. The peak indicators turn red whenever the signal clips. If this happens, you should do the following:

- Lower the faders.
- Right-click the clip indicators and select **Reset Peaks** to reset the clip indicators.
- Play back the section again until no clipping occurs.

Settings

Audio Channel Processing

Allows you to mix or filter audio channels. The following options are available:

- If **Default Channels** is selected, the audio stream is not modified.
- **Mix to Mono** mixes the stereo channels into mono channels.

Unlink Faders

Determines whether you can adjust the faders individually or together.

If **Unlink Faders** is deactivated, moving one fader also moves the other by the same amount. Activating **Unlink Faders** allows you to correct improper stereo balancing by adjusting the level of the channels individually.

If you offset the faders with **Unlink Faders** activated and then deactivate **Unlink Faders**, you can adjust the overall level without changing the level offset between the channels.

Fader offsets are not preserved at the end of the range of movement or once the mouse button is released.

Lock Faders

Locks the faders. Locked faders cannot be changed with the mouse. Other editing methods, for example via remote control or shortcut, are still possible.

RELATED LINKS
[Master Section Window](#) on page 266

Mixing Stereo Channels into Mono Channels

In the **Master Section**, you mix the left and right channels of a stereo track into two mono channels. The **Mix to Mono** option is useful for checking the mono compatibility of stereo mixes, etc. In this case, the output level is automatically reduced by -6 dB to avoid clipping.

PROCEDURE

1. In the **Master Level** pane of the **Master Section**, click **Audio Channel Processing**.
2. Select **Mix to Mono**.

   NOTE

   If **Mix to Mono** is activated, the indicator for the **Master Level** pane is lit, even if the master level is not adjusted. This helps you avoid accidentally leaving **Mix to Mono** activated.

3. To apply the setting, render the file.

RELATED LINKS
[Master Level Pane](#) on page 274

Final Effect/Dithering Pane

This pane in the **Master Section** allows you to add a final effect and dithering to the signal before it is sent to the audio hardware or saved as a file on disk.

You can fold/unfold or completely show/hide the **Final Effects / Dithering** pane.

- To fold/unfold the **Final Effects / Dithering** pane, click it.
- To show/hide the **Final Effects / Dithering** pane, right-click a pane header, and activate/deactivate **Show Final Effects / Dithering**.

Fold/Unfold Pane

Expands or collapses the pane.

Bypass All Effects

Bypasses the effects in the **Final Effect/Dithering** pane.

Presets pop-up menu

Lets you save and recall preset settings. The **Presets** pop-up menu offers additional options to save and load default banks and effects.

Effect Options pop-up menu

Allows you to load another effect to the effect slot. Furthermore, the following options are available:

- **Remove Plug-in** removes the effect from the slot.
- **Shift All Plug-ins Down**/**Shift All Plug-ins Up** allows you to move the effects to another position.
- **Internal Dithering** allows you to add internal dithering to the effect slot.
- If **Active** is activated, the effect is active. If **Active** is deactivated, the effect is excluded from playback and rendering.

Bypass Effect

Bypasses the plug-in during playback and optionally during rendering. The signal is still processed by the plug-in, but is not injected in the audible stream.

RELATED LINKS
Master Section Window on page 266

Dithering

Dithering is the technique of adding small quantities of noise to a signal to reduce the audibility of low level distortion in a digital recording. A small amount of random noise is added to the analog signal before the sampling stage, reducing the effect of quantization errors.

By adding a special kind of noise at an extremely low level, the quantization errors are minimized. The added noise can be perceived as a very low-level quiescent hiss added to the recording. However, this is hardly noticeable and preferred to the distortion that occurs otherwise. The **Noise Shaping** options of the **Internal Dithering** plug-ins allow you to filter this noise to a frequency area less sensitive to the human ear.

In WaveLab Elements, dithering is applied when reducing the number of bits in a recording, for example, when moving from 24 to 16 bits, and when applying processing. You can choose

between WaveLab Elements's internal dithering algorithm, the Lin Dither One algorithm, or any external dithering plug-in.

NOTE

Dithering should always be applied after the output bus fader stage and after any kind of audio process.

RELATED LINKS
Dithering Plug-ins on page 277

Dithering Plug-ins

WaveLab Elements comes with an internal dithering plug-in and the **Lin Dither One** plug-in. However, you can also add other dithering plug-ins.

- To select and activate a dithering plug-in in the **Master Section**, click the plug-in slot in the **Final Effect/Dithering** pane, and select one of the options from the pop-up menu.

- To deactivate the dithering plug-in, open the **Final Effect/Dithering** pop-up menu, and select **Remove Plug-in**.

Adding Other Plug-ins to the Final Effect/Dithering Pane

If you want to use another dithering plug-in than the internal dithering, you can add it to the **Final Effect/Dithering** pane.

NOTE

The meters in the **Master Section** monitor the signal before the **Final Effect/Dithering** pane. To avoid clipping, check the level/pan meter and adjust the output level of the plug-in, if available.

PROCEDURE

1. Select **File** > **Preferences** > **Plug-ins**.

2. Select the **Organize** tab.

3. Locate the plug-in that you want to add to the **Final Effect/Dithering** pane in the list, and activate the checkbox in the **Final** column for the plug-in.

RESULT

The plug-in is available via the pop-up menu in the **Final Effect/Dithering** pane, and can be inserted after the **Master Level** faders. The plug-in is still available for selection as a regular pre-master effect if the corresponding entry in the **Effect** column in the **Plug-ins Preferences** is activated.

When to Apply Dithering

The basic rule is that you should apply dithering when converting an audio file to a lower precision. For example, preparing a 24-bit file for mastering to CD, that uses 16-bit format.

However, even if you are playing back or rendering a 16-bit or 24-bit file to the same precision, you need to apply dithering if you are using any real-time processing in WaveLab Elements. The reason for this is that WaveLab Elements works with an internal precision of 64 bit (floating point) for supreme audio quality. This means that as soon as you perform any kind of processing, the

audio data is treated at this high precision instead of the original 16 bit or 24 bit, thus making dithering necessary.

Examples of real-time processing include level adjustments, effects, mixing of two or more clips in an audio montage, etc. The only time when a 16-bit file is played back at 16-bit precision is if you play it without any fades or effects, and with the **Master Level** faders set to 0.00 (no level adjustment – master level indicator turned off).

Bypassing the Master Section

By default, the **Master Section** is active. You can bypass it for each file individually or globally.

- To bypass the **Master Section** for individual audio files or audio montages, activate the **Bypass Master Section** button at the bottom of the wave/montage window.
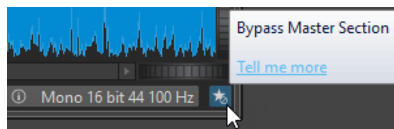
- To bypass the **Master Section** globally, activate the **Bypass Master Section** button at the top left of the **Master Section**.
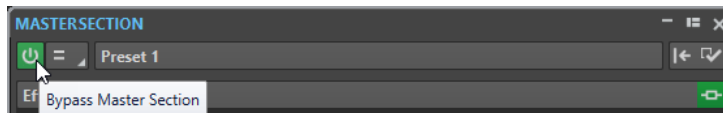
RELATED LINKS
Master Section Window on page 266

Rendering in the Master Section

By rendering the effects using the **Render** function in the **Master Section**, they become a permanent part of a file. So instead of performing all processing in real time during playback, you can save the audio output to a file on disk.

Writing the output of the **Master Section** to a file on disk allows you to apply **Master Section** processing to an audio file, or mix down an audio montage to an audio file.

There are several uses for rendering:

- Mix down a complete audio montage to an audio file.

- Process a file and save a file to a new audio file, including **Master Section** effects, dithering, and other settings. You can choose the format of the new audio file, which allows you to create an MP3 file and add effects at the same time, for example.

- Process one or more regions of an audio file in place or to new files.

RELATED LINKS
Master Section Window on page 266

Rendering Files

PREREQUISITE
You have set up your audio file or audio montage.

PROCEDURE

1. In the **Master Section**, make your settings.

2. On the bottom of the **Master Section**, click **Render**.

3. Make your rendering settings.

4. In the **Result** section, activate **Named File**.

5. Click the **Format** field and select **Edit Format**.

6. Make your settings in the **Audio File Format** dialog and click **OK**.

7. When you have set up the rendering process, click **Start**.

RESULT

The file is rendered.

NOTE

Several rendering operations can be performed at the same time when using different files.

RELATED LINKS
Audio File Format Dialog on page 124
Creating Audio File Format Presets on page 127

In-Place Rendering

In the **Audio Editor**, you can process a section of an audio file or the whole audio file. This is a quick way to process several audio sections in an audio file, or test the effect of different plug-ins on an audio file.

You can select the **Render in Place** function in the following places:

● On the **Render** tab of the **Audio Editor**.

    To start in-place rendering, click **Start**.
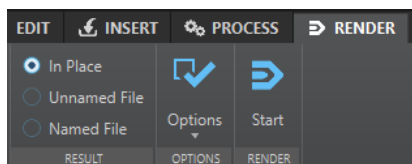
● In the **Master Section**, right-click **Render** and select **Render in Place**.

● In the command bar of a plug-in window

When selecting **Render in Place** via the **Render** tab, you can make additional render settings on the **Options** pop-up menu. When selecting **Render in Place** via the **Master Section** or a plug-in window, the following render settings are always active:

● Fade in/out at boundaries

● Exclude bypassed plug-ins

NOTE

Once an audio section has been processed, there is no automatic bypass of plug-ins or the **Master Section**.

EXAMPLE

An example for using in-place rendering:

Let's say that you are restoring a file and have 3 favorite plug-ins, for example, 3 different deklicker plug-ins. Now you want to use the one that gives the best results.

1. Load all 3 plug-ins in the **Master Section**.

2. Select a region, solo plug-in #1, and play the region.

3. Solo plug-in #2, and play the region.

4. Solo plug-in #3, and play the region.

5. Solo the plug-in that you think sounded the best, and click **Render in Place**, or press **Alt**-**A**.

RELATED LINKS
Render Tab for the Master Section on page 280
Rendering an Audio Selection In-Place on page 280

Rendering an Audio Selection In-Place

You can render the plug-ins of a section of an audio file or the whole audio file.

PREREQUISITE

In the **Audio Editor**, you have opened the audio file that you want to render, and set up the **Master Section**.

PROCEDURE

1. Optional: If you only want to use some plug-ins of the **Master Section**, solo the plug-ins that you want to use.

2. In the wave window, select the audio section that you want to process.

3. Select the **Render** tab.

4. In the **Source** section, open the **Source** pop-up menu and select **Selected Audio Range**.

5. In the **Result** section, activate **In Place**.

6. In the **Options** section, open the pop-up menu and make render settings.

7. In the **Render** section, click **Start**.

RESULT

The audio section or the audio file is processed.

RELATED LINKS
In-Place Rendering on page 279

Render Tab for the Master Section

This tab allows you to select which parts of an audio file to render, and into which format.

● To open the **Render** tab, click **Render** at the bottom of the **Master Section**.
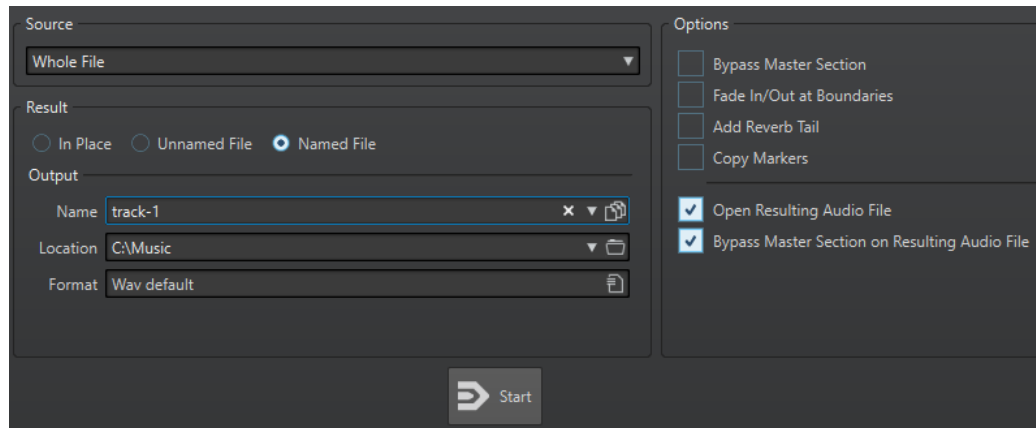
The following options are available for rendering audio files and audio montages:

Source

- **Selected Audio Range** processes and renders the selected audio range.

- **Specific Region** processes and renders an audio range that is specified using region markers. In the pop-up menu next to this option, select the region that you want to render.

In Place

If this option is activated, the rendered audio range replaces the source audio range. This option is only available for audio files.

Unnamed File

If this option is activated, the file is named untitled.

Named File

If this option is activated, you can specify a name for the rendered file.

Name

Enter a name for the rendered file. Clicking the arrow icon opens a menu that offers you several automatic naming options.

Location

Select a folder for the rendered file.

Format

Opens a menu, where you can select the file format.

Bypass Master Section

If this option is activated, the plug-ins and gain of the **Master Section** are bypassed when rendering.

Fade In/Out at Boundaries

If this option is activated, a fade is performed at the audio range boundaries when a new file is created, or a crossfade with the adjacent audio is created if the audio range is processed in place.

Add Reverb Tail

If this option is activated, the audio tail that is produced by effects such as reverb is included in the rendered file.

Some plug-ins do not provide a tail duration to WaveLab Elements. In this case, this option has no effect. For such plug-ins, you could add the **Silence** plug-in to add extra samples at the end of the file.

Copy Markers

If this option is activated, markers that are included in the range to process are copied to the rendered file.

Skip Exclusion Regions

If this option is activated, audio ranges that are marked as muted are skipped and not included in the result.

Open Resulting Audio File

If this option is activated, each rendered file is opened in a new window.

Bypass Master Section on Resulting Audio File

If this option is activated, playback of the resulting audio file bypasses the entire **Master Section** after rendering. This setting can be toggled by clicking on the button at the bottom right of the wave window or montage window.

NOTE

It is recommended to activate this option, because you do not need to monitor this new file through the effects again when the effects have been applied to a file.

Render Tab for Audio Files

The following options on the **Render** tab are exclusive to rendering audio files.

Source

Whole File processes and renders the whole file.

In Place

If this option is activated, the rendered audio range replaces the source audio range.

Render Tab for Audio Montages

The following option on the **Render** tab is exclusive to rendering audio montages.

Source

Whole Montage processes and renders the whole audio montage.

Master Section Presets

You can save all settings that are made in the **Master Section** as a preset and load the presets later.

RELATED LINKS

Saving Master Section Presets

You can save all settings that are made in the **Master Section** as a preset. This includes which processors are used, which settings are made for each one of them, and the dithering options.

PROCEDURE

1. Set up the **Master Section**.

2. Click **Presets** at the top of the **Master Section**, and select **Save As**.

3. Optional: In the **Save Master Section Preset** dialog, click the path name, enter a name, and click **OK** to create a new subfolder in the **Master Section** preset folder.

4. Enter a name for the preset in the **Name** field.

5. Select the options that you want to save in the preset.

6. Click **Save**.

RELATED LINKS
Save Master Section Preset Dialog on page 283
Loading Master Section Presets on page 284

Save Master Section Preset Dialog

In this dialog, you can save a **Master Section** setup as preset and define which parts of the current **Master Section** you want to include in the preset.

● To open the **Save Master Section Preset** dialog, click **Presets** at the top of the **Master Section**, and select **Save As**.
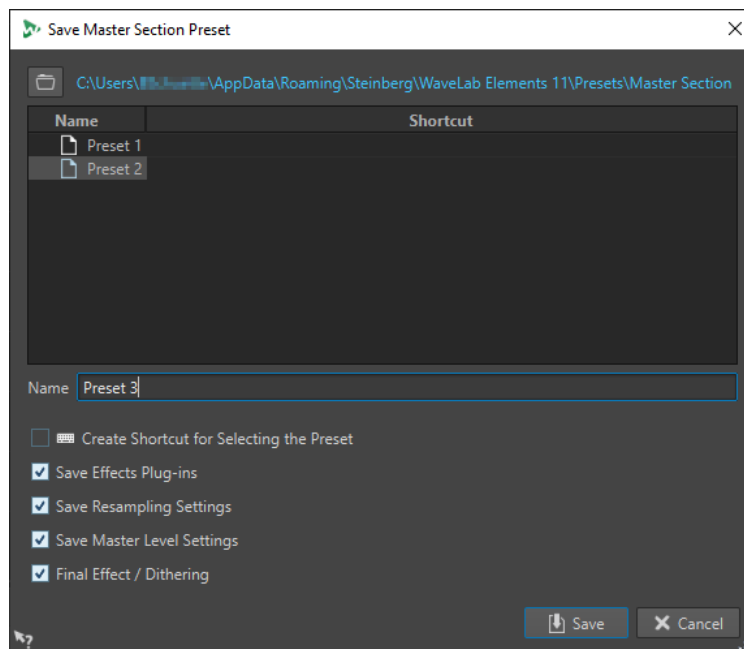
Location

Opens the root folder of the preset in the File Explorer/macOS Finder. Here, you can create subfolders in which presets can be saved.

Presets list

Lists all existing presets.

Name

Allows you to specify the name of the preset to save.

Save Effects Plug-ins

If this option is activated, the effect plug-ins are saved with the preset.

Save Resampling Settings

If this option is activated, the resampling settings are saved with the preset.

Save Master Level Settings

If this option is activated, the master level settings are saved with the preset.

Save Final Effect/Dithering Plug-in

If this option is activated, the final effect/dithering plug-in is saved with the preset.

RELATED LINKS
Saving Master Section Presets on page 282

Loading Master Section Presets

You can load a previously saved **Master Section** preset and a temporarily saved **Master Section** preset.

Open the **Presets** pop-up menu at the top of the **Master Section** window.

- To load a preset that has been previously saved in the `Presets\Master Section` folder, select a preset from the **Presets** pop-up menu.

- To load a preset from any location, select **Load Preset**, select a preset, and click **Open**.

- To load a temporarily saved preset, open the **Restore** submenu, and select a preset.

RELATED LINKS
Load Master Section Preset Dialog on page 284

Load Master Section Preset Dialog

In this dialog, you can specify which parts of a saved **Master Section** preset to load when opening it.

- To open the **Load Master Section Preset** dialog, click **Presets** at the top of the **Master Section**, and select **Load Preset**.

This dialog only opens if it is activated on the **Presets** pop-up menu of the **Master Section**. Open the **Presets** pop-up menu at the top of the **Master Section**, and activate **Open Options Dialog when Selecting Preset**.
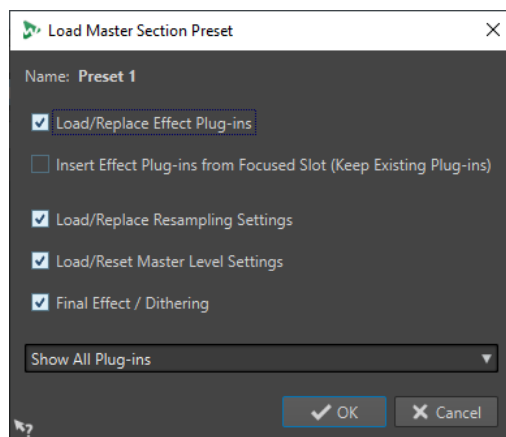
Now, when restoring a temporarily saved preset or opening a saved preset a dialog with the following options opens:

Name

Displays the name of the preset.

Load/Replace Effect Plug-ins

If this option is activated, the active effect plug-ins are removed, and any new plug-ins are inserted from the top slot.

Insert Effect Plug-ins from Focused Slot (Keep Existing Plug-ins)

If this option is activated, the current effect plug-ins are kept, and any new plug-ins are inserted from the top slot.

Load/Replace Resampling Settings

If this option is activated, the current resampling settings are reset, and any new settings are loaded.

Load/Reset Master Level Settings

If this option is activated, the current **Master Level** settings are reset, and any new settings are loaded.

Load/Replace Final Effect/Dithering Plug-in

If this option is activated, the current final effect/dithering plug-in is removed, and the new plug-in is loaded.

Plug-in Visibility Options

Allows you to select whether you want to show all plug-ins, hide all plug-ins, or only restore the plug-ins that were visible when you saved the preset. The following options are available:

- **Show All Plug-ins**
- **Hide All Plug-ins**
- **Restore Saved Plug-in Visibility**

RELATED LINKS

Master Section Presets Pop-up Menu

This pop-up menu offers several options for saving, managing, and restoring **Master Section** presets.

- To open the **Presets** pop-up menu, click the presets pane at the top of the **Master Section**.
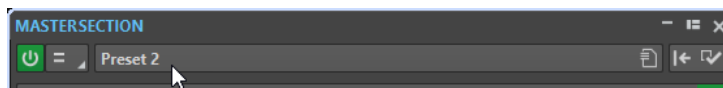
Save

Saves the changes you have made to an existing preset.

Save As

Opens a dialog where you can specify a name and a location for the preset.

Organize Presets

Opens the **Master Section** folder in the File Explorer/macOS Finder, where you can rename or delete presets.

Load Preset

Allows you to load a **Master Section** preset via the File Explorer/macOS Finder. For example, this is useful if you want to load a preset that is provided by another source and not located in your default root folder.

Open Options Dialog when Selecting Preset

If this option is activated, when you select a preset, a dialog opens that allows you to choose how to load the preset you select.

Store Temporarily

Lets you select one of the slots to temporarily save a preset.

Restore

Lets you restore a previously saved preset.

List of saved presets

Lists the presets that are saved in the **Presets** folder of the **Master Section**.

RELATED LINKS
Master Section Presets on page 282

Monitoring Background Tasks

When rendering, you can monitor the process, and pause or cancel tasks.

A status bar below the wave window and the montage window shows the progress of the current rendering process. You can cancel or pause the rendering with the corresponding buttons.

RELATED LINKS
Global Preferences on page 379

Canceling Background Tasks

You can cancel rendering processes that run in the background.

PROCEDURE

- Do one of the following:

  - In the status bar, click **Cancel**.

  - Press **Alt/Opt** - **.** on your keyboard.

RELATED LINKS
Monitoring Background Tasks on page 286

Dropouts

A dropout most likely occurs when your computer does not have the processing power to handle all used effect processors.

To avoid dropouts, try the following:

- Use fewer effects.
- Consider rendering the processing rather than running it in real time. Then master from the processed file without applying effects. Dropouts never occur when rendering to a file.
- Do not process any files in the background.

If neither of the above helps, check the audio card preference settings. You might need to adjust the audio buffer settings. If a dropout occurs during a real-time mastering process we recommend that you re-master. Stop playback, click the dropout indicator to reset it, and try again.

Markers

Markers allow you to save and name specific positions in a file. Markers are useful for editing and playback.

For example, markers can be used for the following:

- Indicate cue points or absolute time locations.
- Highlight problem sections.
- Visually separate tracks.
- Set the wave cursor to a specific position.
- Select all audio between two positions.
- Loop sections in an audio file.

There is no limit to the amount of markers that you can have in a file.

NOTE

The functions in the **Markers** window are the same for audio files and audio montages. However, the **Markers** window for audio montages offers additional options regarding clips.

RELATED LINKS

Marker Types

You can use different marker types to locate certain positions quickly.

The following marker types are available:

Generic markers

Allow you to locate positions and select all the audio between two points, for example. Generic markers can be created during recording.

Region start and end markers

Define start and end points for generic regions. Region start and end markers can be created during recording and are used in pairs.

Loop start and end markers

Are used to define loop points and are required to access loop editing functions on the **Process** tab of the **Audio Editor**. Loop start and end markers are connected to the **Loop** mode when playing back audio. These markers are useful for editing and creating loops before transferring a sound to a sampler. Loop markers are used in pairs.

Markers Window

In this window, you can create, edit, and use markers while working on an audio file or audio montage.

* To open the **Markers** window, open an audio file or audio montage and select **Tool Windows** > **Markers**.
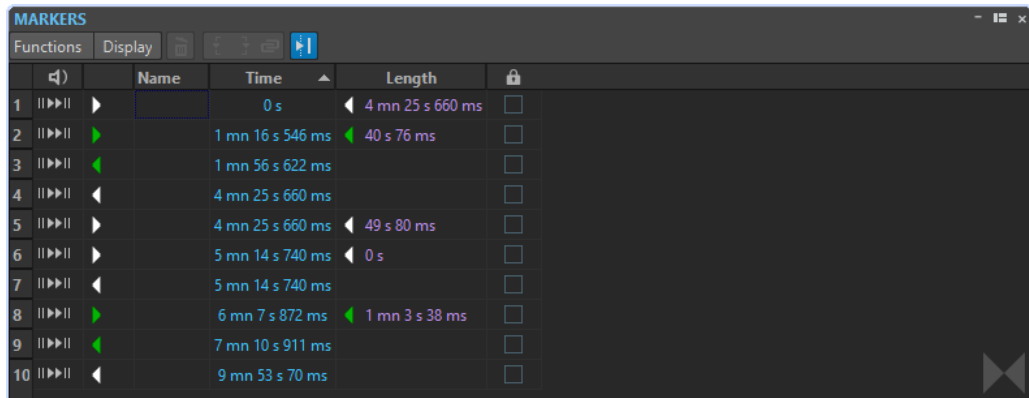
Markers window for audio montages

Markers List

The **Markers** window contains a list of all markers of the active file along with their details and controls. You can create and edit indicators from the markers list.

Marker numbers

Clicking the number of a marker scrolls the waveform to reveal the corresponding marker.

Play Pre-Roll

Plays back the audio from the marker position with a pre-roll.

You can also press **Alt** and click **Play Pre-Roll** to play back from the marker position with a short pre-roll.

Play

Plays back the audio from the marker position.

Marker type

Shows the marker type. To change the marker type, click the marker icon and select another marker type from the pop-up list.

Name

Shows the marker name. To change the name, double-click in the corresponding cell and enter a new name.

Time

Shows the marker position on the time ruler. To change the position, double-click in the corresponding cell and enter a new value.

Channels

Shows the channels on which the markers are located. You can click the channel to specify another channel for the marker or select **Set for All Channels** to set the marker for all channels.

Length

Shows the time between the marker start position and the corresponding end marker.

- To zoom in on the region between a start and end marker, click the corresponding cell in the **Length** column.

- To select the region between a start and end marker, double-click the corresponding cell in the **Length** column. This function is only available for markers in the **Audio Editor**.

Lock

Allows you to lock markers. Locking markers prevents them from being accidentally dragged to a new position in the wave window or the montage window. To lock a marker, activate the corresponding checkbox.

Clip Reference (only available for markers in the Audio Montage window)

A marker can be attached to the left or right edge of a clip, and to its waveform. When you move a clip, the corresponding marker moves along. The clip reference column shows the name of the clip.

Offset (only available for markers in the Audio Montage window)

Shows the distance between the marker and the reference point.

Functions Menu

Depending on whether the **Audio Editor** or the **Audio Montage** window is open, different options are available. The following options are available for audio files and audio montages:

Select All

Selects all markers in the markers list.

Invert Selection States

Inverts the selection status of all markers.

Deselect All

Deselects all markers.

Delete Selected Markers

Deletes all markers that are selected.

Default Marker Names

Opens the **Default Marker Names** dialog, where you can select default marker names for each marker type.

Customize Command Bar

Opens a dialog where you can customize marker-related menus and shortcuts.

The following options of the **Functions** menu are only available for audio files:

Select in Time Range

Selects the markers located in the selection range in the wave window.

The following options of the **Functions** menu are only available for audio montages:

Bind Selected Markers to Start of Active Clip

Makes the marker position relative to the start of the active clip. When the start of this clip moves, the marker moves, too.

Bind Selected Markers to End of Active Clip

Makes the marker position relative to the end of the active clip. When the end of this clip moves, the marker moves, too.

Detach Selected Markers from Their Associated Clip

Makes the marker position relative to the start of the audio montage.

Follow Playback

If this option is activated and you play back audio, a green bar next to the marker name indicates the marker that was last played back.

Lock Selected Marker

Locks the selected marker. If this option is activated, the marker cannot be moved or deleted.

Full Clip Attachment

Attaches markers to a clip so that they are copied or deleted when the clip is copied or deleted.

Customize Command Bar

Opens the **Customize Commands** dialog, which contains options to hide or show specific command bar buttons.

Display Menu

Use the **Display** menu to determine which types of markers are displayed in the markers list and on the timeline.

Creating Markers

You can create markers in the wave window and montage window in stop mode or during playback. You can create specific markers if you already know what you want to mark, or create generic markers.

PROCEDURE

1. Do one of the following:

   - Start playback.

   - In the wave window or the montage window, set the cursor to the position where you want to insert the marker.

2. Do one of the following:

   - In the **Audio Editor** or **Audio Montage** window, select the **Insert** tab, and click a marker icon in the **Markers** section.

   - In the **Audio Editor** or **Audio Montage** window, select the **Insert** tab, and click **Create/ Name Marker** in the lower right corner of the **Markers** section. This opens the **Create Marker** dialog, which allows you to create different types of markers and marker pairs at the edit cursor position or at the selection range.

   - Right-click the upper part of the time ruler, and select a marker from the context menu.

   - Press `Insert`. This creates a generic marker.

     To see the key commands for other marker types, right-click above the timeline of the wave window or montage window.

3. Optional: To set a marker for an individual channel, click the channel name in the **Channel** column of the **Markers** window, and select the channel for which you want to set the marker.

RELATED LINKS

Create Marker Dialog

This dialog allows you to create different types of markers and marker pairs at the edit cursor position or at the selection range.

● To open the **Create Marker** dialog, click **Create/Name Marker** in the lower right corner of the **Markers** section of the **Insert** tab in the **Audio Editor** or **Audio Montage** window.
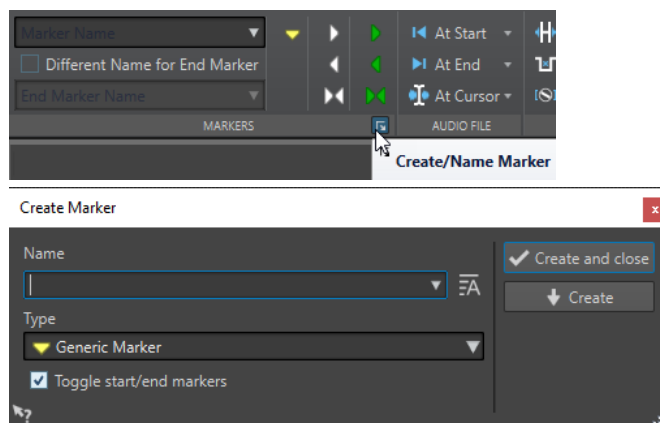
Name

Allows you to enter the name of the marker. If you leave this field empty, a generic name is created.

Default Name

If this option to the right of the **Name** field is activated, WaveLab Elements suggests a generic name.
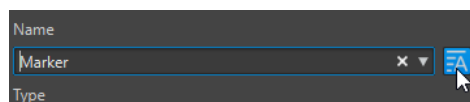
Type

Specifies the type of marker to be generated.

Toggle Start/End Markers

If this option is activated and you create a start marker, the corresponding end marker is selected, and vice versa.

Create and Close

Creates the marker and closes the **Create Marker** dialog.

Create

Creates the marker without closing the **Create Marker** dialog.

RELATED LINKS
Creating Markers on page 291
Insert Tab (Audio Editor) on page 113

Creating Markers at Selection Start and End

You can mark a selection for looping or review, for example.

PROCEDURE

1. In the wave window or the montage window, create a selection range.

2. Do one of the following:

    ●   In the **Audio Editor** or the **Audio Montage** window, select the **Insert** tab and select a marker pair in the **Markers** section.

    ●   In the wave window, create a selection range, right-click it, and select the marker pair.

    ●   In the wave window or the montage window, create a selection range, right-click above the time ruler, and select the marker pair.

RELATED LINKS
Wave Window on page 103
Montage Window on page 177
Insert Tab (Audio Montage) on page 187
Insert Tab (Audio Editor) on page 113

Duplicating Markers

Duplicating markers is a quick way to create a marker from an existing marker.

PROCEDURE

●   In the wave window or the montage window, hold down **Shift** , click a marker, and drag.

RELATED LINKS
Wave Window on page 103
Montage Window on page 177

Deleting Markers

Markers can be deleted in the wave window or the montage window, and in the **Markers** window.

RELATED LINKS
Deleting Markers in the Wave/Montage Window on page 294
Deleting Markers in the Markers Window on page 294

Deleting Markers in the Wave/Montage Window

PROCEDURE

● To delete markers in the wave or montage window, do one of the following:

  ● In the wave/montage window, right-click a marker and select **Delete**.

  ● Drag and drop a marker icon upwards, outside the time ruler.

RELATED LINKS
Deleting Markers on page 293
Wave Window on page 103
Montage Window on page 177

Deleting Markers in the Markers Window

This is useful if your project has many markers or if the marker that you want to delete is not visible in the wave/montage window.

PROCEDURE

1. In the **Markers** window, select one or several markers.

   You can also select **Functions** > **Select All**.

2. Click **Delete Selected Markers** or select **Functions** > **Delete Selected Markers**.

RELATED LINKS
Markers Window on page 289
Deleting Markers on page 293

Moving Markers

You can adjust marker positions in the wave window and in the montage window.

PROCEDURE

● In the wave/montage window, drag a marker to a new position on the time ruler.

   If **Snap to Magnets** is activated, the marker snaps to the cursor position or the beginning/end of a selection or waveform.

RELATED LINKS
Wave Window on page 103
Montage Window on page 177
Time Ruler and Level Ruler on page 49

Navigating to Markers

You can jump to the previous or next marker using the corresponding marker buttons.

● To jump to the previous/next marker, select the **View** tab, and in the **Cursor** section, click **Move Cursor to Previous Marker/Move Cursor to Next Marker**.

● To set the wave cursor to a marker position, in the wave window or the montage window, double-click a marker triangle.

Hiding Markers of a Specific Type

For a better overview, you can hide marker types.

PROCEDURE

1. In the **Markers** window, select **Display**.

2. Deactivate the marker types that you want to hide.

    You can make the markers visible again by activating the corresponding marker type.

Converting the Type of a Single Marker

You can convert markers of a specific type to another type.

PROCEDURE

1. In the **Markers** window, click the marker icon that you want to convert.

2. Select a new marker type from the list.

Renaming Markers

You can change the names of markers.

- To rename a marker in the wave window or the montage window, right-click a marker, select **Rename**, and enter a new name.

- To rename a marker in the **Markers** window, double-click a marker name in the **Name** column, and enter a new name.

- To edit the default names, in the **Markers** window, select **Functions** > **Default Marker Names**.

Default Marker Names Dialog

In this dialog, you can specify the default marker names.

- To open the **Default Marker Names** dialog, open the **Markers** window, and select **Functions** > **Default Marker Names**.
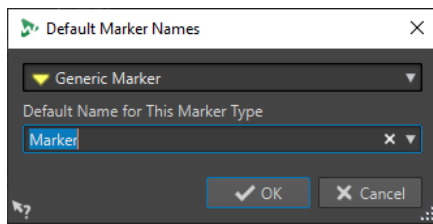
Marker type

> Lets you select the type of marker for which you want to specify a default name.

Default Name for This Marker Type

> Lets you specify the default name for the selected marker type.

RELATED LINKS
Markers Window on page 289
Renaming Markers on page 295

Selecting Markers

There are several ways to select markers.

- In the wave window or the montage window, click a marker.
- In the **Markers** window, click in a cell. The corresponding marker is selected.
- Use **Ctrl/Cmd** or **Shift** to select multiple markers.

The marker icon changes its background to indicate the selection.
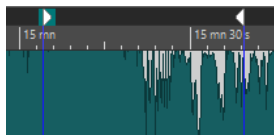
RELATED LINKS
Wave Window on page 103
Montage Window on page 177
Markers Window on page 289

Selecting the Audio Between Markers

You can select the audio between two adjacent markers or between any two markers. This allows you to select a section that has been marked.

- To select the audio between two adjacent markers, double-click between two adjacent markers in the wave window or the montage window.
- To select several regions between two adjacent markers, double-click between two adjacent markers, and after the second click, drag to select the adjacent regions.
- To select the audio between a region marker pair, hold down **Shift**, and double-click a region marker.
- To extend the selection until the end of a marker region, in the wave/montage window, hold down **Shift**, and double-click in the marker region that you want to select.
- To open the **Markers** window and display further information about a specific marker, hold down **Alt**, and double-click a marker.

Binding Markers to Clips in the Audio Montage

In the **Audio Montage** window, you can bind markers to clips. By doing this, the marker remains in the same position, relative to the clip start/end, even if the clip is moved or resized in the audio montage.

You can find the options regarding binding clips and markers on the **Functions** menu of the **Markers** window, and when right-clicking a marker in the **Audio Montage** window.

When a marker is bound to a clip element, its name is preceded by a blue character.
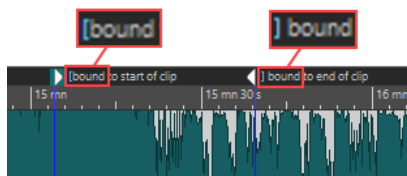
How Marker Information is Saved

WaveLab Elements uses MRK files as a way to save marker information that is independent of the file format. However, to make marker information exchangeable between applications, WaveLab Elements also saves some information in the Wave headers.

This speeds up the file saving process, in case that only a marker setting was changed. However, this only applies if **Write Markers in WAV File Header (RIFF Format/BWF Format)** is deactivated in the **Audio Files Preferences** on the **File** tab. By default, MRK files are created and information is saved in the Wave headers.

- When you import a file for the first time, any loop points are imported and displayed as loop markers.

- When you save a file in Wave format, the loop points are saved both as a part of the actual file and in the MRK file.

- When you open a file that includes markers that were added in WaveLab Elements and markers that were added in another application, all markers are displayed in WaveLab Elements.

Metering

WaveLab Elements contains a variety of audio meters that you can use for monitoring and analyzing audio. Meters can be used to monitor audio during playback, rendering, and recording. Furthermore, you can use them to analyze audio sections when playback is stopped.

RELATED LINKS
Meter Windows on page 298
Meter Settings on page 298

Meter Windows

WaveLab Elements contains a variety of audio meters that you can use for monitoring and analyzing audio. Meters can be used to monitor audio during playback, rendering, and recording. Furthermore, you can use them to analyze audio sections when playback is stopped.

The meter windows can be accessed via the **Meters** menu. There can only be one instance of each audio meter.

The axis of most audio meters can be rotated, to view the graphics horizontally or vertically. For some meters, you can also style and customize parameters via a settings dialog.

RELATED LINKS
Metering on page 298
Docking and Undocking Tool Windows and Meter Windows on page 45

Opening and Closing Meter Windows

You can close all meter windows you do not need for your project.

- To open a meter window, select **Meters** and select a meter window.
- To close a docked meter window, right-click the meter window tab and select **Hide**.
- To close an undocked meter window, click its **X** button.

RELATED LINKS
Meter Windows on page 298

Meter Settings

You can set up most meters in the corresponding settings dialogs. For example, you can adjust the behavior, scale, and color of the meters.

- To open the settings dialog for a meter, select **Functions** > **Settings**.
- To check the results after changing the settings without closing the settings dialog, click **Apply**.
- To close the settings dialog and discard any changes that you have made, even if you have clicked the **Apply** button before, click **Cancel**.

Resetting the Meters

You can reset the display of some meters, for example, the **Level Meter**.

PROCEDURE

● In the meter window, click **Reset**, or select **Functions** > **Reset**.

RESULT

All values and numerical indicators of the meter are reset.

Level Meter

The **Level Meter** displays the peak and average loudness/decibel levels of your audio file.

● To open the **Level Meter**, select **Meters** > **Level Meter**.
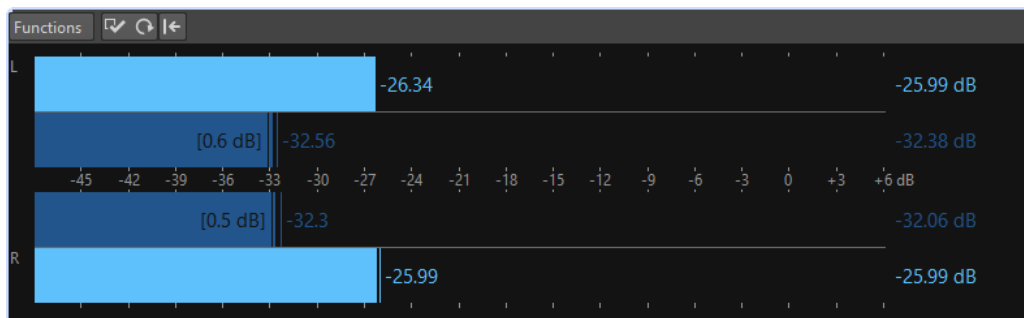
Level Meters

The **Level Meter** shows the peak level and the average loudness in the following way:

● The peak level meters display the peak levels of each channel, graphically and numerically.

● The VU meters measure the average loudness (RMS) of each channel. These meters have a built-in inertia, evening out loudness variations over a user-defined time span. If you are monitoring playback or the audio input, you can see two vertical lines following each VU meter bar. These lines indicate the average of the most recent minimum RMS values (left line) and the average of the most recent maximum RMS values (right line). To the left, the difference between the minimum and maximum average values is displayed. This gives you an overview of the dynamic range of the audio material.

● The maximum peak and loudness values are displayed to the right of the meter bars. The numbers in brackets to the right of the maximum peak values indicate the number of times that clipping occurs (0 dB signal peaks). Values between 1 and 2 are acceptable, but if you get a larger number, you should lower the master level to avoid digital distortion.

● Recording levels should be set so that they only rarely clip. If the master level is set too high, the sound quality and frequency response are compromised at high recording levels, with unwanted clipping effects. If the level is set too low, noise levels can be high relative to the main sound being recorded.

Level Meter Settings Dialog

In the **Level Meter Settings** dialog, you can adjust the behavior, scale, and color of the meters.

● To open the **Level Meter Settings** dialog, open the **Level Meter** window, and select **Functions** > **Settings**.

Peak Meter Section

Ballistics – Release Rate

Determines how fast the peak level meter falls after a peak.

Ballistics – Peak Hold Time

Determines how long a peak value is displayed. The peak can be displayed as a line or a number. If the meter is too short, only the line is displayed.

Top Zone/Middle Zone/Low Zone

The color buttons allow you to select colors for the low, middle, and top zones of the level meter. You can define the range for the top and middle zones by changing the corresponding values.

VU Meter (Loudness) Section

VU Meter (Loudness)

Activates/Deactivates the VU meter.

Ballistics – Resolution

Sets the time that is used to determine the loudness. The smaller this value, the more the VU meter behaves like the peak meter.

Ballistics – Range Inertia

Sets the time that is used to determine the recent minimum and maximum value lines, and therefore determines how quickly these respond to changes in loudness.

Global Colors Section

In this section, you select colors for the meter background, marks (scale units), and grid lines.

Global Range (Peak and VU Meter) Section

In this section, you specify the minimum and maximum values of the displayed level range.

Phasescope

The **Phasescope** indicates the phase and amplitude relationship between two stereo channels.

● To open the **Phasescope**, select **Meters** > **Phasescope**.
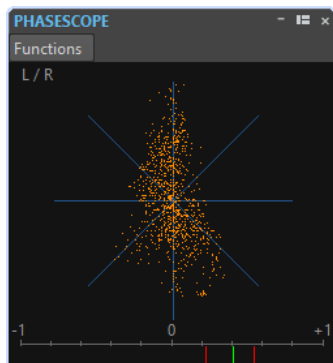
Reading the Phasescope

The **Phasescope** works as follows:

- A vertical line indicates a perfect mono signal (the left and right channels are the same).
- A horizontal line indicates that the left channel is the same as the right, but with an inverse phase.
- A fairly round shape indicates a well-balanced stereo signal. If the shape leans to one side, there is more energy in the corresponding channel.
- A perfect circle indicates a sine wave on one channel, and the same sine wave shifted by 45° on the other.
- Generally, the more you can see a thread, the more bass is in the signal, and the more spray-like the display, the more high frequencies are in the signal.

Phase Correlation Meter

The phase correlation meter at the bottom of the display works as follows:

- The green line shows the current phase correlation, and the two red lines show the recent minimum and maximum values.
- With a mono signal, the meter shows +1, indicating that both channels are perfectly in phase.
- If the meter shows –1, the two channels are the same, but one is inverted.
- Generally, for a good mix, the meter should show a value between 0 and +1.

Phasescope Settings

In the **Phasescope Settings** dialog, you can adjust the behavior, scale, and color of the meters.

- To open the **Phasescope Settings** dialog, open the **Phasescope** window, and select **Functions** > **Settings**.

Background
Click this to change the background color.

2D Display
Allows you to adjust the color for the grid and the signal of the 2D display.

Auto-Size (Maximize)
If this option is activated, the display is optimized to fit in the window.

Correlation Display

This is where you select colors for the elements in the phase correlation meter display, and adjust the peak hold time for the maximum and the minimum indicator.

Number of Samples to Display

This setting affects the length of the phase coil and the density of the display. For audio with high sample rates, you might want to raise this value.

Spectroscope

The **Spectroscope** shows a graphical representation of the frequency spectrum, analyzed into 60 separate frequency bands, represented as vertical bars.

● To open the **Spectroscope**, select **Meters** > **Spectroscope**.
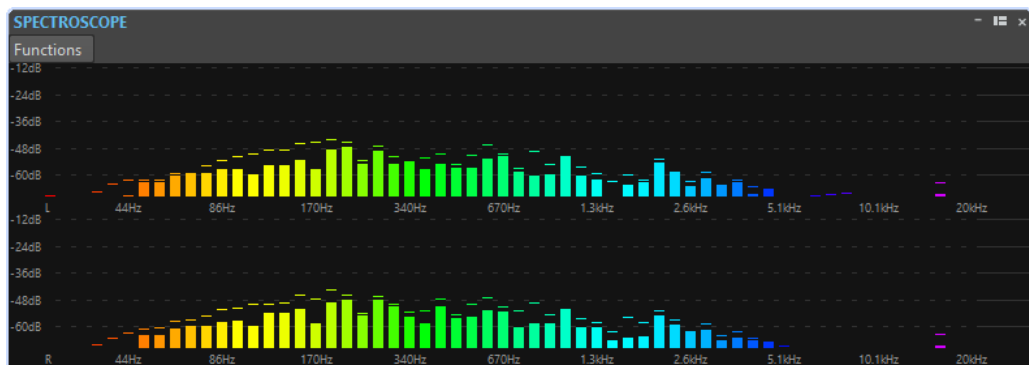
Peak levels are shown as horizontal lines above the corresponding bands, indicating recent peak/maximum values. The **Spectroscope** offers a quick spectrum overview. For a more detailed analysis of the audio spectrum, use the **Spectrometer**.

On the **Functions** menu, you can specify whether only high audio levels are displayed, or whether medium and low levels are also shown.

The following settings are available:

● **Restrict to High Audio Levels**

● **Include Medium Audio Levels**

● **Include Low Audio Levels**

Spectrometer

The **Spectrometer** uses FFT (Fast Fourier Transform) techniques to display a frequency graph, providing a precise and detailed real-time frequency analysis.

● To open the **Spectrometer**, select **Meters** > **Spectrometer**.
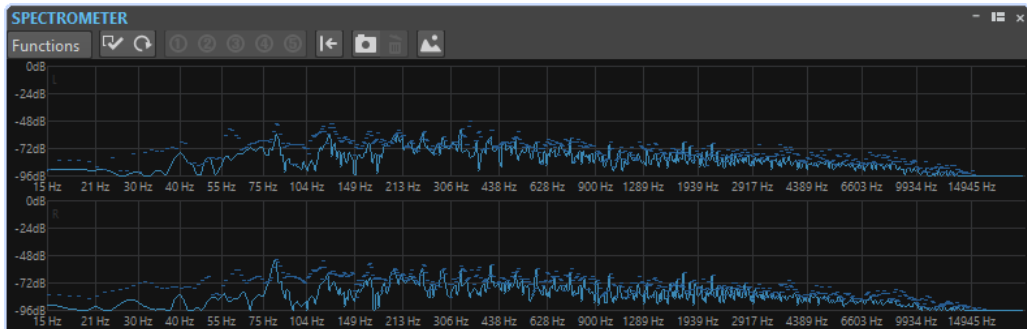
The current frequency spectrum is shown as a linear graph. Spectrum peaks are shown as short horizontal lines.

Zooming in the Spectrometer Window

In the **Spectrometer** window, you can zoom in on a frequency area.

- To zoom in on a frequency area, click and drag a rectangle in the spectrum. The display is zoomed in so that the selected frequency range fills the window.

- To return to full-scale display, select **Functions** > **Zoom out Fully**, or double-click in the spectrum.

Spectrometer Snapshots

You can take snapshots of the current spectrum, to check the effects of adding EQ, for example.

The snapshots are displayed on the spectrum graph. Up to five snapshots can be displayed. The sixth snapshot replaces the earliest snapshot.
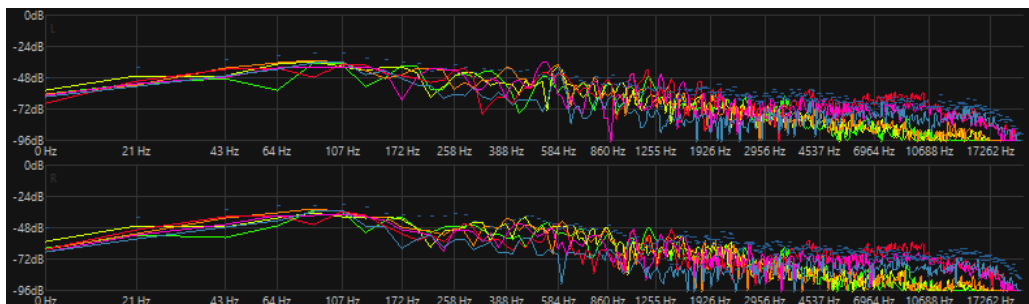
- To take a snapshot, select **Functions** > **Add Snapshot**.

- To erase the last snapshot, select **Functions** > **Erase Last Snapshot**.

Exporting FFT Data as ASCII Text

FFT (Fast Fourier Transform) analysis is a method to convert a waveform from the time domain to the frequency domain. You can export the displayed FFT data as a text file.

PROCEDURE

1. In the **Audio Editor**, select the **Analysis** tab.

2. In the **Monitoring** section, activate **Edit Cursor** or **Audio Selection**.

3. In the **Spectrometer** window, select **Functions** > **Export FFT Data as ASCII**.

4. Specify a file name and location.

5. Click **Save**.

RESULT

The resulting text file can be imported into Microsoft Excel, or other applications that allow graph plotting from text files.

Creating Spectrometer Settings Presets

You can save up to 5 **Spectrometer Settings** as presets and assign them the **Presets** buttons. This allows you to quickly compare different **Spectrometer** settings.

PROCEDURE

1. In the **Spectrometer** window, select **Functions** > **Settings**.

2. In the **Spectrometer Settings** dialog, make your settings.

3. Click the **Presets** menu and select **Assign to Preset Button**.

4. Select the button to which you want to apply the preset.

5. Click **OK** to close the **Spectrometer Settings** dialog.

6. Start playback and click the **Apply Preset** buttons to switch between the presets.
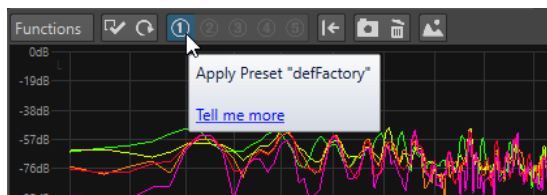
RELATED LINKS
Spectrometer Settings on page 304

Spectrometer Settings

In the **Spectrometer Settings** dialog, you can adjust the behavior and display of the meters, and assign up to five sets of spectrometer settings to the preset buttons.

● To open the **Spectrometer Settings** dialog, open the **Spectrometer** window, and select **Functions** > **Settings**.

Process Tab

Analysis Block Size

The higher this value, the higher the accuracy in the frequency domain, that is, the spectrum is divided into more bands. At the same time, the time localization is reduced. This means that the higher the value, the less easy to know where a given frequency starts and ends in time.

> NOTE
>
> Raising the block size value also requires more CPU power and introduces a higher latency. Therefore, high values should only be used for offline monitoring.

Analysis Overlapping

To get more accurate results, the program can analyze overlapping blocks. This setting determines the amount of overlap between these blocks – the higher the value, the more accurate the results.

NOTE

Raising this value is very CPU-intensive. A setting of 50% requires twice the amount of CPU power, a setting of 75% requires four times the CPU power, etc.

Smoothing Window

Allows you to choose which method to use for pre-processing the samples in order to optimize the **Spectrogram**.

Display Tab

Frequency Ruler

Determines the frequency range to be shown, at full-scale display. The lowest frequency to be shown depends on the **Analysis Block Size** setting and the highest actual frequency depends on the sample rate.

Logarithmic Scale

When this option is activated, each octave occupies the same horizontal space in the display. If you need more resolution in the high frequency range, you may want to turn this off.

Level Ruler

Determines the range of the vertical level ruler in dB.

Normalize Display to 0 dB

If this option is activated, the level display is offset, so that the highest point on the curve is displayed as 0 dB. This is only possible in non-real-time mode.

Optimize Scale

Optimizes the level scale so that only the relevant level range is shown. This is only possible in non-real-time mode.

Display Type

Allows you to toggle the display between curve and bar graph.

Peak Hold Time

Determines for how long the peak level graph remains displayed when the levels drop.

Colors

This is where you select colors for the curves, grid, background, etc.

Presets

You can save up to 5 **Spectrometer Settings** as presets. This allows you to quickly switch between different **Spectrometer** settings during playback.

RELATED LINKS

Bit Meter

The **Bit Meter** shows how many bits are used.

- To open the **Bit Meter**, select **Meters** > **Bit Meter**.
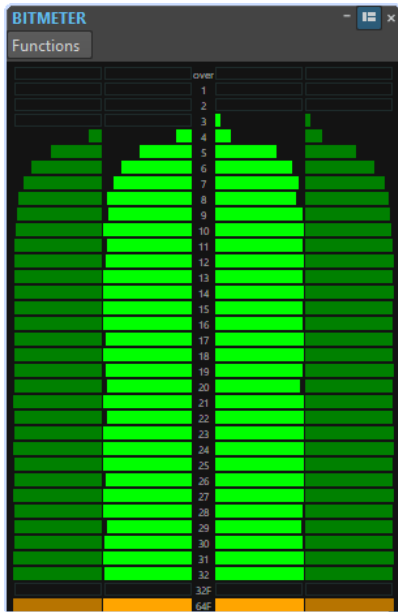
While you may expect the maximum number of bits to be the same as the precision of the audio file, this is not necessarily the case.

As soon as you perform any kind of real-time processing on an audio file, the audio data is treated at a much higher precision (64-bit floating point) to allow for pristine audio quality. The only time when a 16-bit file is played back at 16-bit precision is, for example, if you play it without any fades or effects, and with the master faders set to 0.00.

How to Read the Bit Meter

- The inner meters show how many bits are used.
- The outer meters show how many bits were recently in use.
- The **Over** segment indicates clipping.
- The **32F** segment indicates samples with 32-bit float precision.
- The **64F** segment indicates samples with 64-bit float precision.

When to Use the Bit Meter

The **Bit Meter** is useful in the following situations:

- To check whether dithering is necessary. If you are playing back or mixing down to 16 bits, and the **Bit Meter** shows that more than 16 bits are used, you should apply dithering.
- To see the actual precision of an audio file. For example, even though a file is in 24-bit format, only 16 bits may be used, or a 32-bit file may only use 24 bits.
- To see the bit depth output of a plug-in.
- To see whether samples are 32-bit float, 64-bit float, or any PCM precision between 8 bit and 32 bit at the monitoring point.

Bit Meter Settings

In the **Bit Meter Settings** dialog, you can adjust the behavior and display of the **Bit Meter**.

● To open the **Bit Meter Settings** dialog, open the **Bit Meter** window, and select **Functions** > **Settings**.

Colors

You can adjust the colors of the meter segments, grids, background, etc. by clicking the corresponding color buttons.

Bit Hold Time

Determines for how long peak values are held by the outer meters.

Bit Display

Determines how the bits are displayed. In **Intuitive Mode (Proportional to Signal Level)**, the absolute value of the signal is shown. The bar graph goes higher with higher signal levels, similar to a common level meter.

In **True Mode (Signed Samples)**, the meter shows the direct mapping of the bits. However, because the actual values may be negative, there is no intuitive relationship with the level. This mode is useful if you want to check the full range, because all bits are displayed, regardless of the audio signal level.

Oscilloscope

The **Oscilloscope** offers a highly magnified view of the waveform around the playback cursor position.

● To open the **Oscilloscope**, select **Meters** > **Oscilloscope**.
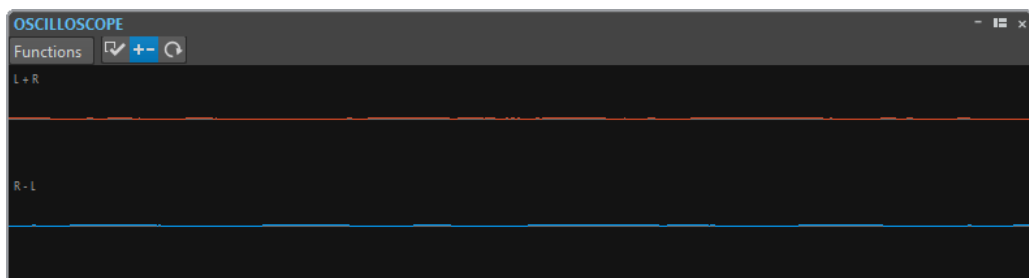
If you are analyzing stereo audio, the **Oscilloscope** normally shows the separate levels of the two channels. However, if you activate **Show Sum and Subtraction** on the **Functions** menu, the upper half of the **Oscilloscope** shows the mix of the two channels and the lower half shows the subtraction.

Oscilloscope Settings

In the **Oscilloscope Settings** dialog, you can adjust the display colors, and activate/deactivate **Auto-Zoom**. When **Auto-Zoom** is activated, the display is optimized so that the highest level reaches the top of the display at all times and even small signals are visible.

● To open the **Oscilloscope Settings** dialog, open the **Oscilloscope** window, and select **Functions** > **Settings**.

Wavescope

The **Wavescope** meter displays a real-time waveform drawing of the audio signal being monitored. It can be useful when recording or rendering a file if **File Rendering** metering monitoring mode is active.

● To open the **Wavescope**, select **Meters** > **Wavescope**.
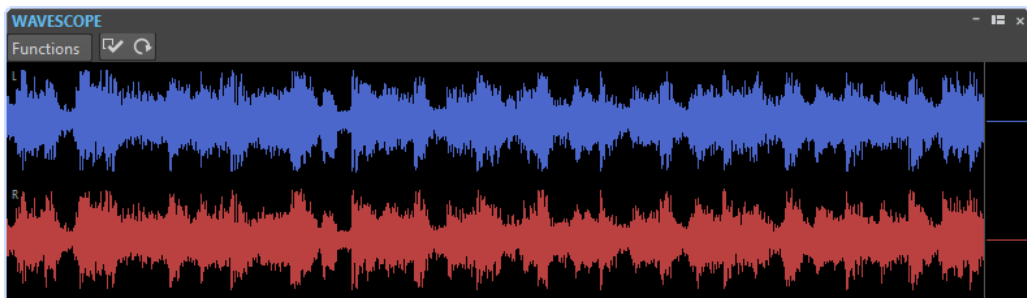
RELATED LINKS
Wavescope Settings on page 308

Wavescope Settings

In the **Wavescope Settings** dialog, you can make various color settings for the background, grid, and waveform display, and set the waveform rendering speed and vertical zoom.

● To open the **Wavescope Settings** dialog, open the **Wavescope** window, and select **Functions** > **Settings**.

Colors

Lets you select colors for the waveform graphics.

Waveform Rendering Speed

Determines how much the waveform display is compressed.

If **Same As Live Spectrogram** is activated, the rendering speed of the **Wavescope** display has the same speed as the **Live Spectrogram** display.

Level Zoom

Determines the level zoom. Set a high value if the waveform has a low amplitude.

Clear Waveform when Reaching Right of Pane

If this option is activated, the waveform display is cleared each time the cursor reaches the right end of the display. If this option is deactivated, the new waveform overwrites the previous waveform.

RELATED LINKS
Wavescope on page 308

Writing Operations

To start the CD/DVD writing process, you must have completed all CD/DVD writing preparations.

RELATED LINKS
CD Window on page 247
Write Audio Montages on page 311
Write Audio CD Dialog on page 309

Write Audio CD Dialog

In this dialog, you can write your audio montage to an audio CD.

- When you want to write audio montages to an audio CD, open the **CD** window, and select **Functions** > **Write Audio CD**.
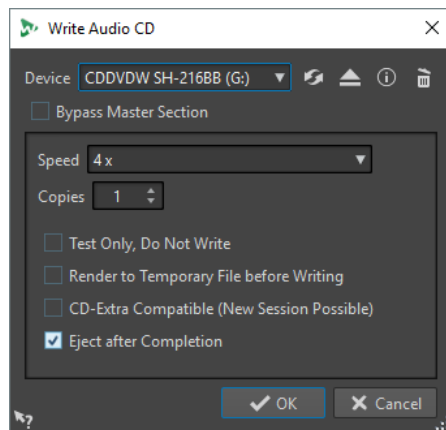
Device

Allows you to select the disc writer that you want to use.

NOTE

On the Mac, insert a disc in the drive after opening WaveLab Elements. Otherwise, the drive is under the control of the operating system and is not available for WaveLab Elements.

Refresh

Scans the system for connected optical devices. This is done automatically when this dialog opens. Click the update icon after you insert a new blank disc to update the **Speed** menu.

NOTE

On the Mac, insert a disc in the drive after opening WaveLab Elements. Otherwise, the drive is under the control of the operating system and is not available for WaveLab Elements.

Eject Optical Medium

Ejects the optical medium present in the selected drive.

Device Information

Opens the **Device Information** dialog that shows information about the selected device.

Erase Optical Disc

Erases the optical disc present in the selected drive, provided it is a rewritable disc.

Bypass Master Section

If this option is activated, the audio signal is not processed through the **Master Section** before being written to the disc.

Speed

Allows you to select the writing speed. The highest speed depends on the capabilities of your writing device and the disc present in the device.

Copies

Allows you to enter the number of copies that you want to write.

Test Only, Do Not Write

If this option is activated, clicking **OK** initiates a simulation of writing the CD. If this test is passed, the real write operation will succeed. If the test fails, try again at a lower writing speed.

Render to Temporary File before Writing

If this option is activated, a disk image is created before writing, which eliminates the risk of buffer underruns. This is useful if your project uses many audio plug-ins while writing. It is activated automatically when writing multiple copies. While this option makes the writing operation longer, it allows you to select an higher writing speed.

CD-Extra Compatible (New Session Possible)

If this option is activated, the resulting audio CD is compatible with the CD-Extra format.

Eject after Completion

If this option is activated, the disc is ejected after the writing operation.

RELATED LINKS

Erase Optical Media Dialog

In this dialog, you can quickly or fully erase an optical disc before writing.

● To open the **Erase Optical Media** dialog, open the **Write Audio CD** dialog and click the garbage icon.
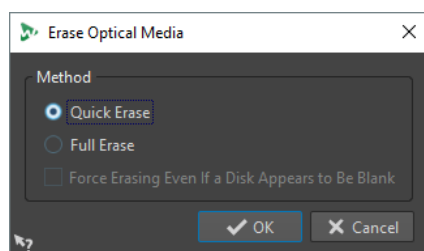
Quick Erase

Erases the table of contents of the disc.

Full Erase

Erases all parts of the disc.

Force Erasing Even If a Disk Appears to Be Blank

If this option is activated, the disc is erased, even if it is declared as blank. Use this option to make sure that discs that were partially or minimally erased are fully erased.

RELATED LINKS
Write Audio CD Dialog on page 309

Write Audio Montages

You can write audio montages to an audio CD.

RELATED LINKS
Writing an Audio Montage to an Audio CD on page 311

Writing an Audio Montage to an Audio CD

PREREQUISITE

Set up your audio montage and make your CD writing settings in the **Global Preferences**.

NOTE

On Mac, insert a disc in the drive after opening WaveLab Elements. Otherwise, the drive is under the control of the operating system and is not available for WaveLab Elements.

PROCEDURE

1. Optional: In the **CD** window, select **Functions** > **Check CD Conformity** to check that all settings conform to the Red Book standard.

2. Insert an empty CD into your drive.

3. In the **CD** window, select **Functions** > **Write Audio CD**.

4. From the **Device** pop-up menu, select the writing device that you want to use.

5. If you want to bypass the **Master Section**, activate **Bypass Master Section**.

6. Select the writing speed from the **Speed** pop-up menu.

7. Select the number of copies that you want to write.

   When you want to write more than one copy, it is recommended to activate **Render to Temporary File before Writing**.

8. Optional: Activate one or several of the following options:

   ● Activate **Test Only, Do Not Write** if you want to test if the writing operation would be successful.

   ● Activate **Render to Temporary File before Writing** if your audio montage uses many plug-ins. This way, the audio data is sent to the CD writer fast enough.

   ● Activate **CD-Extra Compatible (New Session Possible)** if you want the resulting audio CD to be compatible with the CD-Extra format.

- Activate **Eject after Completion** if you want the disc to be automatically ejected after the writing operation.

9. Click **OK**.

RESULT

The writing operation starts.

RELATED LINKS

CD-Text

CD-Text is an extension of the Red Book Compact Disc standard and allows you to save text information such as title, songwriter, composer, and disc ID on an audio CD.

The text data is then displayed by CD players that support the CD-Text format. The CD-Text can also be included in the audio CD report.

NOTE

The CD-Text functionality is only available if you have selected the mode **Stereo** in the **Audio Montage Properties**.

RELATED LINKS

CD-Text Editor Dialog

In this dialog, you can specify information such as track title, performer, and songwriter, that is written onto the CD as CD-Text.

You can add information about the disc itself and each individual track. This information is entered in the text fields that scroll horizontally. There is one pane of fields for the disc itself and a pane for each track.

NOTE

The CD-Text functionality is only available if you have selected the mode **Stereo** in the **Audio Montage Properties**.

- To open the **CD-Text Editor** dialog, in the **CD** window, select the track for which you want to edit the CD-Text, and select **Functions** > **Edit CD-Text**.
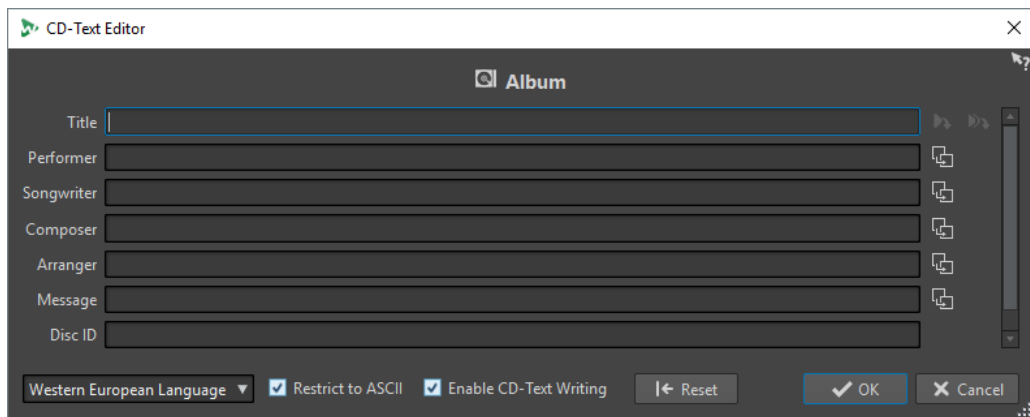
Copy CD Track Marker Name

Copies the name of the CD track marker to this field.

Copy CD Track Start Marker Name to All CD Track Titles

Copies the name of each CD track start marker to the title field of each CD track.

Copy Text to All Following Tracks

Copies the text to all tracks that are located after the current one.

Scrollbar

Allows you to navigate across all CD-Texts. The first position corresponds to the whole CD, other positions to individual tracks.

Language

Allows you to select how characters should be encoded on the CD.

NOTE

If a character is not CD-Text compatible, it is displayed as a **?** character.

Restrict to ASCII

To ensure maximum compatibility with CD players, it is recommended to restrict the characters to ASCII when using the **Western European** option. If this option is activated, and you type a non-compatible character, a **?** character is displayed.

Enable CD-Text Writing

If this option is activated, the CD-Text is written onto the CD.

Reset

Resets the settings to their default value.

RELATED LINKS

Data CD/DVD Projects

A data CD/DVD project can be used to compile and write a data-only CD, DVD, Blu-ray, or to write to ISO image. You can enter a name for your disc and change the disc file structure before writing your data to a CD, DVD, Blu-ray, or ISO image.

RELATED LINKS
Creating a Data CD/DVD Project on page 314
Writing a Data CD/DVD Project on page 314

Creating a Data CD/DVD Project

A data CD/DVD project can be used to compile and write a data-only CD, DVD, Blu-ray, or to write to ISO image.

PROCEDURE

1. Select **File** > **Tools** > **Data CD/DVD**.

2. Add files to the project, using one of the following methods:

    - Drag the files from the WaveLab Elements **File Browser** window or from the File Explorer/macOS Finder into the **Data CD/DVD** window.

    - Drag an audio file or audio montage tab into the **Data CD/DVD** window.

    - Right-click a file tab, and select **Add to** > **Add to Data CD/DVD**.

3. Optional: Click **New Folder**, specify a folder name, and arrange the files by dragging.

RELATED LINKS
Data CD/DVD Projects on page 314

Writing a Data CD/DVD Project

PREREQUISITE
Open the **Data CD/DVD** dialog, and add the files that you want to write to a data CD/DVD.

PROCEDURE

1. Click **Write Data CD/DVD**.

2. Select a writing device.

    - If you select **ISO Image**, specify a file name and file location.

    - If you select a CD/DVD writer, specify the writing speed and make further settings.

3. Click **OK**.

RELATED LINKS
Data CD/DVD Projects on page 314
Write Data CD/DVD Dialog on page 316

Data CD/DVD Dialog

In this dialog, you can create a data CD/DVD project, and write it to a CD, DVD, Blu-ray, or an ISO image.

- To open the **Data CD/DVD** dialog, select **File** > **Tools** > **Data CD/DVD**.
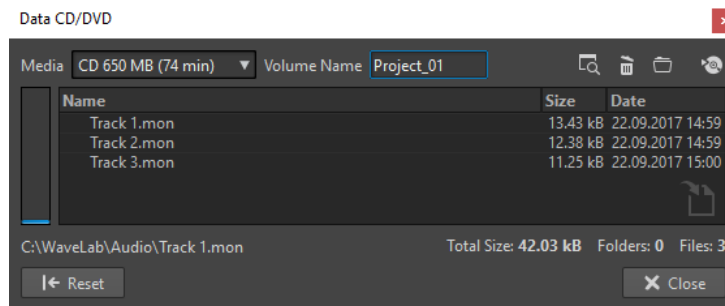
Media

Allows you to select the media type you want to write. If the media size that you want to use is not listed, select the media type that offers the size closest to your requirements.

Volume Name

Allows you to specify the volume name of the CD/DVD.

Open File Location

Opens the File Explorer/macOS Finder to show the location of the selected file.

Remove Selected Files and Folders

Removes the selected files and folders from the CD/DVD project.

Create New Folder

Creates a folder. You can also create subfolders.

Write Data CD/DVD

Opens the **Write Data CD/DVD** dialog from which you can write the disc.

Data CD/DVD list

Shows the contents of the CD/DVD project, the size, creation date, and the number of files.

Available space on media

Indicates how much space is used on the media. The **Total Size** of the data CD/DVD project is shown below the data CD/DVD list.

Reset

Removes all files from the data CD/DVD project.

RELATED LINKS

Write Data CD/DVD Dialog

In this dialog, you can write a data CD/DVD project to a CD/DVD or an ISO file.

● To open the **Write Data CD/DVD** dialog, open the **Data CD/DVD** dialog and click **Write Data CD/DVD**.
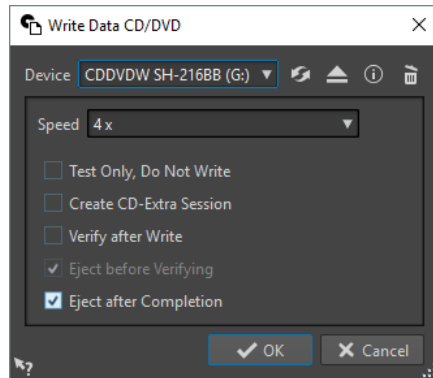
Device

Allows you to select the disc writer that you want to use or select **ISO Image** to write a file on the hard drive. Writing an ISO image creates a copy of a future optical disc.

NOTE

On the Mac, open WaveLab Elements without a disc in the drive. Otherwise, the drive is under the control of the operating system and is not available for WaveLab Elements.

Refresh

Scans the system for connected optical devices. This is done automatically, when this dialog opens. Click the update icon after you insert a new blank disc, to update the **Speed** menu.

Eject Optical Disc

Ejects the optical disc present in the selected drive.

Device Information

Opens the **Device Information** dialog that shows information about the selected device.

Erase Optical Disc/ISO Image

Erases the optical disc present in the selected drive, provided it is a rewritable disc. If **ISO Image** is selected, clicking the button deletes the existing ISO file.

ISO File Name

If **ISO Image** is selected in the **Device** menu, specify the file name and file location of the ISO file in the text field.

Speed

Allows you to select the writing speed. The highest speed depends on the capabilities of your writing device and the disc present in the device.

Test Only, Do Not Write

If this option is activated, clicking **OK** initiates a simulation of writing the CD. If this test is passed, the real write operation will succeed. If the test fails, try again at a lower writing speed.

Create CD-Extra Session

If this option is activated, the data is written in a new session, after the audio tracks. This creates a CD Extra, also known as Enhanced CD and CD Plus. For this to work, the CD in the drive must have audio tracks on it, written with the CD Extra option. Otherwise the operation fails.

Verify After Write

If this option is activated, the data on the disc is automatically verified after the writing process.

Eject Before Verifying

If this option is activated, the disc is ejected and retracted before the verification process, to force the drive out of the write state.

NOTE

This is only possible if the disc can be retracted automatically.

Eject After Completion

If this option is activated, the disc is ejected after the writing operation.

RELATED LINKS
Data CD/DVD Dialog on page 315
Writing a Data CD/DVD Project on page 314

Audio CD Formats

Knowing background information on the CD format helps you better understand how to create your own CDs.

RELATED LINKS
Basic CD Formats on page 317

Basic CD Formats

There are a number of different formats for the contents of a CD disc. For example, audio CDs, CD-ROMS, and CD-I. These are all slightly different.

The audio CD specification is called Red Book. It is this standard to which WaveLab Elements conforms.

NOTE

Red Book CD is not a real file format. All the audio on the CD is saved in one big file. This is different from hard disks, for example, where each file is saved separately. Keep in mind that all the audio is in fact one long stream of digital data.

RELATED LINKS
Audio CD Formats on page 317

CD-Extra Support

CD-Extra is a format that allows for the writing of both audio and data on a single CD, just like Mixed Mode CDs. When writing an audio CD, you can prepare it for CD-Extra support (also known as Enhanced CD or CD Plus).

The difference is that when Mixed Mode CDs are written with the audio placed on the last tracks of the CD, for CDs in the CD-Extra format the audio is contained in the first tracks of the CD, and the data follows subsequently.

All features of the Red Book audio CD are possible with CD-Extra, unlike with Mixed Mode CDs. After an audio CD has been written with CD-Extra support, the data can be added to the CD in a separate session, by creating and writing a data CD project.

NOTE

Some computer CD drives may not recognize CDs in the CD-Extra format.

RELATED LINKS
Audio CD Formats on page 317

Types of Events on an Audio CD

There are three types of events that can be used to specify various sections of audio on the CD.

Track start

There can be up to 99 tracks on one CD. Each is identified by its start point only.

Track sub-index

On advanced CD players, a track can be divided into sub-indexes (sometimes called only indexes). These are used to identify important positions within a track. There can be 98 sub-indexes in each track. However, because it is difficult and time-consuming to search for and locate to a sub-index, many CD players ignore this information.

Pause

A pause is added before each track. Pauses can be of variable lengths. Some CD players indicate the pauses between tracks on their displays.

RELATED LINKS
Audio CD Formats on page 317

Frames, Positions, Small Frames, and Bits

The data on an audio CD is divided into frames.

A frame consists of 588 stereo samples. 75 frames make up one second of audio. This is because 75 x 588 = 44100, and because the sampling frequency of the CD format is 44100 Hz (samples per second), this equals one second of audio. When you specify positions on the CD, in WaveLab Elements, you do it in the format mm:ss:ff (minutes:seconds:frames). The frame values go from 0 to 74, because there are 75 frames to a second.

Technically, there is no way to specify something smaller than a frame on a CD. One effect of this is that if the sample length of a track on the CD does not equal a perfect number of frames, some blank audio must be added at the end. Another effect of this is that when you play the CD, you can never locate to anything closer than a frame. If you need some data in the middle of a frame, you still have to read the whole frame. Again, this is unlike a hard disk, where you can retrieve any byte on the disk, without reading the surrounding data.

But frames are not the smallest block of data on a CD. There is also something called "small frames". A small frame is a container of 588 bits. 98 small frames together make up one regular frame. In each small frame, there is only room for six stereo samples, which means that a lot of space is left for data other than the actual audio. There is information for encoding, laser synchronization, error correction, and the PQ data to identify the track boundaries. This PQ data is of major importance to anyone who wants to create their own CD, and handled effortless in WaveLab Elements.

RELATED LINKS
Audio CD Formats on page 317

ISRC Codes

International Standard Recording Code (ISRC) is an identification that is only used on CDs intended for commercial distribution. WaveLab Elements allows you to specify an ISRC code for each audio track. These codes are provided by your publisher or clients.

The ISRC code is structured as follows:

- Country Code (2 ASCII characters)
- Owner Code (3 ASCII characters or digits)
- Recording Year (2 digits or ASCII characters)
- Serial Number (5 digits or ASCII characters)

The groups of characters are often presented with hyphens to make them easier to read, but hyphens are not part of the code.

RELATED LINKS
Audio CD Formats on page 317

UPC/EAN Codes

UPC/EAN code – the Universal Product Code/European Article Number, is a catalog number for an item (such as a CD) intended for commercial distribution. On a CD, the code is also called the Media Catalog Number and there is one such code per disc. These codes are provided by your publisher or clients.

UPC is a 12-digit barcode widely used in the USA and Canada. EAN-13 is a 13-digit barcoding standard (12 + a checksum digit) defined by the GS1 standards organization. EAN is now renamed as International Article Number, but the abbreviation has been retained.

RELATED LINKS
Audio CD Formats on page 317

Pre-Emphasis

CD pre-emphasis refers to process designed to increase, within a band of frequencies, the magnitude of some (usually higher) frequencies compared to the magnitude of other (usually lower) frequencies in order to improve the overall signal-to-noise ratio by lowering the frequencies during reproduction.

Pre-emphasis is commonly used in telecommunications, digital audio recording, record cutting and in FM broadcasting transmissions. The presence of pre-emphasis on a track is sometimes indicated by a checkmark in the **Pre-Emphasis** ⬤ column on the **Import Audio CD** dialog.

Disc-At-Once – Writing CD-Rs for Duplication Into Real CDs

WaveLab Elements only writes audio CDs in Disc-at-Once mode.

- If you want to create a CD-R to use as a master for a real CD production, you must write the CD-R in Disc-At-Once mode. In this mode, the entire disc is written in one pass. There are other ways of writing a CD, namely Track-At-Once and Multi-Session. If you use these writing formats, the link blocks created to link the various recording passes together will be recognized as uncorrectable errors when you try to master from the CD-R. These links can also result in clicks when playing back the CD.

- Disc-At-Once mode provides more flexibility when specifying pause lengths between tracks.

- Disc-At-Once is the only mode that supports sub-indexes.

Writing On The Fly vs. CD Images

WaveLab Elements writes a CD on the fly, that is, it does not create a CD image before writing. This method makes writing CDs/DVDs faster and requires less disc space. However, you can also create an image prior to writing a CD/DVD.

Loops

Looping a sound allows you to repeat a section of the sample indefinitely in order to create a sustain of unlimited length. Instrumental sounds in samplers rely on looping organ sounds, for example.

In WaveLab Elements, loops are defined by loop markers or the audio selection. Loop markers are added, moved, and edited just as any other type of marker.

To ensure that you find a good loop point, note the following:

- A long loop usually sounds the most natural. However, if the sound does not have a stable section in the middle (an even sustain part), it might be hard to find a good long loop.

  For example, a piano note which decays continuously is hard to loop because the start point of the loop is louder than the end point. A flute is much simpler, because the sound in the sustain section is very stable.

- A loop should start shortly after the attack, that is, when the sound has stabilized to a sustaining note.

- If you set up a long loop, it should end as late as possible but before the sound starts decaying to silence.

- Short loops are difficult to position within the sound. Try to position them near the end.

NOTE

More information about looping in general, and the exact capabilities of your sampler in particular can be found in the manual of the sampler.

RELATED LINKS
Creating Loops on page 321
Loop Refinement on page 322

Creating Loops

You can loop the audio selection or use loop markers and tweak the loop during playback.

PROCEDURE

1. In the **Audio Editor**, select the audio section that you want to loop.

2. Right-click the audio selection and select **Create Loop from Selection**.

3. On the transport bar, activate **Loop**.

4. Right-click **Play Audio Range** and activate **Region Between Marker Pairs**.

5. Right-click **Loop** and select how often you want the audio to loop in the **Loop Mode** menu. The following options are available:

   - **Play Continuously**
   - **Play Twice**
   - **Play 3 Times**
   - **Play 4 Times**

- **Play 5 Times**

6. Play back the loop.
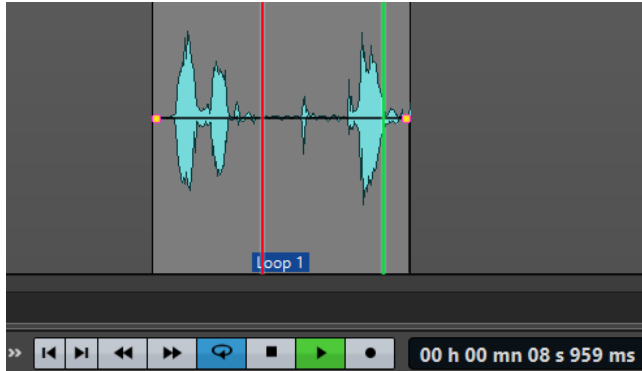
The audio selection is looped.

7. Optional: Adjust the position of the markers or the left and right selection edges to tweak the loop.

8. Optional: Adjust the left and right selection edges to tweak the loop.

AFTER COMPLETING THIS TASK

Creating a loop this way does not necessarily lead to good loops, because clicks or abrupt changes in timbre at the turning point can occur.

We suggest that you use this method for setting up the basic length of the loop and then use the **Loop Tweaker** and **Loop Tone Uniformizer** for optimizing.

RELATED LINKS
Looping Audio Which Is Not Very Well Suited for Looping on page 330
Loop Refinement on page 322
Loop Tweaker Dialog on page 323
Loop Tone Uniformizer Dialog on page 330

Loop Refinement

A basic loop can contain clicks or abrupt changes in timbre at the turning point. To create a seamless loop, you can refine the loop. Use the **Loop Tweaker** dialog to tweak an existing loop selection so that it loops perfectly or use it to create a loop from material which is not perfectly suited to create a loop.

You can automatically detect loop points by scanning the area between two loop markers. You can specify parameters that determine how accurate the program should be when suggesting loop points.

If the automatic search for loop points is not successful, you can process the waveform to allow for smoother loops by crossfading areas of the waveform close to the loop start and end points.

RELATED LINKS
Loop Tweaker Dialog on page 323
Refining Loops on page 327

Loop Tweaker Dialog

This dialog allows you to adjust loop start and end points, and to crossfade loop boundaries. The loop start and end points are specified via loop start and end markers.

If more than one loop marker pair is available in the audio file, click in the area between a loop marker pair to tweak the corresponding start and end points.

- To open the **Loop Tweaker** dialog, open the **Audio Editor**. Select the **Process** tab. In the **Loop** section, select **Tweaker**.

Loop Points Adjustment Tab

This tab allows you to manually refine a loop selection by dragging the waveform to the left/right or by using the automatic search buttons to find the nearest suitable loop point. The aim is to align the waveforms so that they meet at a zero-crossing point where the waveforms match as closely as possible.

NOTE

When you adjust your loop start and end points in the dialog, the start and end loop markers in the main waveform window adjust accordingly. This movement may not be visible depending on how much you move the markers and on the zoom factor that you have selected.

TIP

- If you want to hear the difference when you adjust the loop markers, activate **Loop** on the transport bar during playback.
- If you are not using a crossfade or post-crossfade, you do not have to click **Apply** when tweaking loop points.
- You can leave the **Loop Tweaker** dialog open and manually adjust the position of the markers in the main waveform windows.

NOTE

If you use the **Loop Tweaker** feature on surround audio files, only the L/R channels are displayed and used to match the waveforms, but all channels are processed.
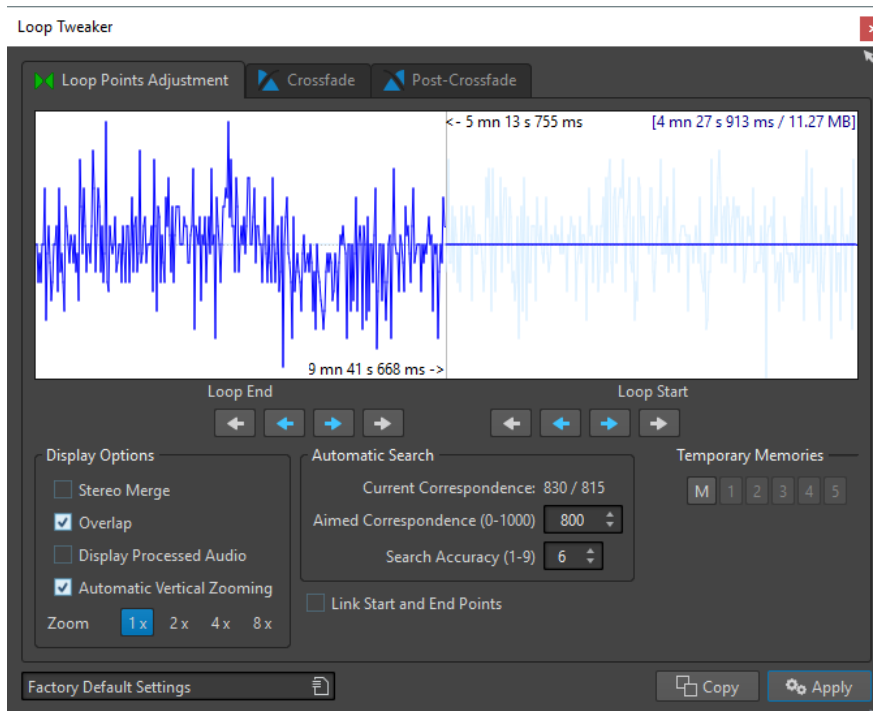
The top of this dialog shows the beginning and the end of the waveform between the loop markers. The bottom of this dialog offers the following options:

Loop End – Inner Arrows

Move the loop end points to the left/right.

Loop End – Outer Arrows

Invokes an automatic search for the nearest suitable loop point to the left/right of the loop end point and moves the end point to that position.

Loop Start – Inner Arrows

Moves the loop start points to the left/right.

Loop Start – Outer Arrows

Invokes an automatic search for the nearest suitable loop point to the left/right of the loop start point, and moves the start point to that position.

Stereo Merge

If this option is activated for a stereo file, the two waveforms are overlaid. Otherwise, they are shown in two separate sections.

Overlap

If this option is activated, the waveforms of both halves are continued in the other half. This shows how the waveform looks like right before and after the loop.

Display Processed Audio

This option only makes sense after you have applied a crossfade. If this option is activated, a preview of the waveform after crossfading is displayed. If this option is deactivated, you see what the waveform looks like without crossfading.

Automatic Vertical Zooming

If this option is activated, the vertical magnification is adjusted so that the waveform always fills the entire display vertically.

Zoom

Sets the zoom factor.

Current Correspondence

Indicates how well the waveforms near the loop points match one another. The left value estimates the similarity across several wave cycles, while the right value estimates the similarity of the few samples near the loop points. The higher the values, the better the match.

Aimed Correspondence (0-1000)

Sets up the automatic search for good loop points. This defines how well the found section must resemble the section to which it is compared, in order to be considered a match. The higher the value, the more precise the resemblance must be. A value of 1000 requires a 100% match.

Search Accuracy (1-9)

Determines how many samples are to be taken into account by the auto-find analysis. Higher values result in greater accuracy, but also in longer processing times.

Link Start and End Points

If this option is activated, both the start and end points move simultaneously when you adjust the loop points manually. That is, the loop length stays exactly the same, and the entire loop moves.

Temporary Memories

Allows you to save up to five different sets of loop points which you can later recall. This allows you to try out different loop settings. To save a set, click the **M** button, then one of the buttons 1-5.

Crossfade Tab

This tab allows you to apply a crossfade between the audio at the end of a loop and the audio at the beginning of the loop. This can be useful to smooth the transition between the end of a loop and its beginning, especially when you use material that is not perfectly suited to create a loop. Use the envelope drag points or value sliders to adjust the crossfade envelope. Click **Apply** to create the crossfade.
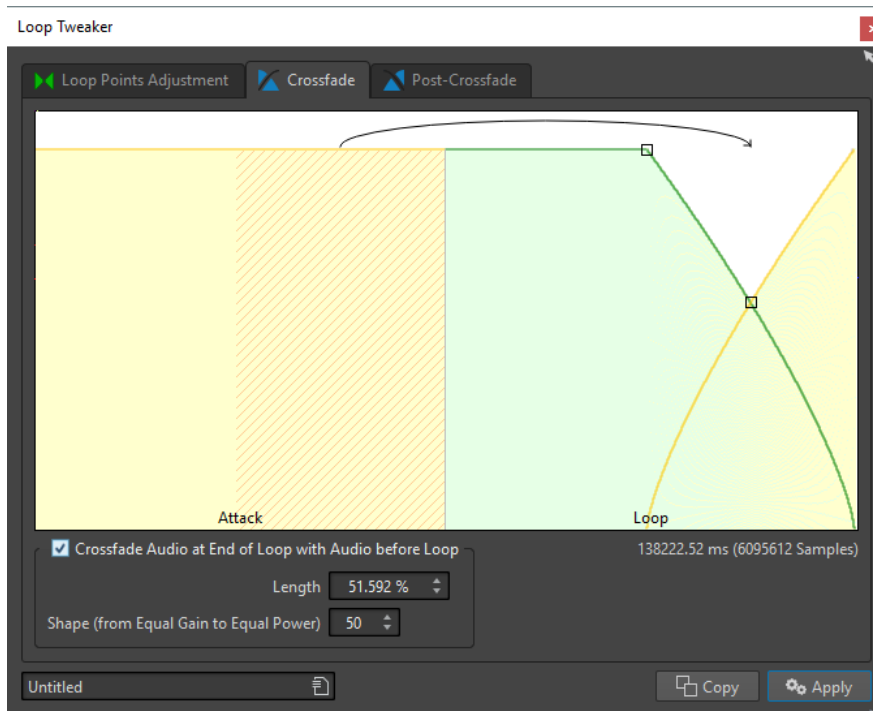
Crossfade Audio at End of Loop with Audio before Loop

To enable crossfading, activate this checkbox. The crossfade is applied when you click **Apply**.

Length

Determines the length of the crossfade. Generally, you want the crossfade to be as short as possible, with an acceptable result.

> NOTE
>
> - Using a long crossfade smoothens the loop. However, more of the waveform is processed, which changes its character.
> - A shorter crossfade affects the sound less, but the loop is not as smooth.

Shape (from Equal Gain to Equal Power)

Determines the shape of the crossfade. Use low values for simple sounds and high values for complex sounds.

Post-Crossfade Tab

Post-crossfading means crossfading the loop back into the audio after the end of the loop so that there is not glitch when playback continues after the loop. This is done by mixing a copy of the loop back into the audio.

This tab allows you to apply a crossfade at the end of the loop by mixing a copy of the loop back into the audio. Use the envelope drag points or value sliders to adjust the crossfade envelope. Click **Apply** to create the post crossfade.
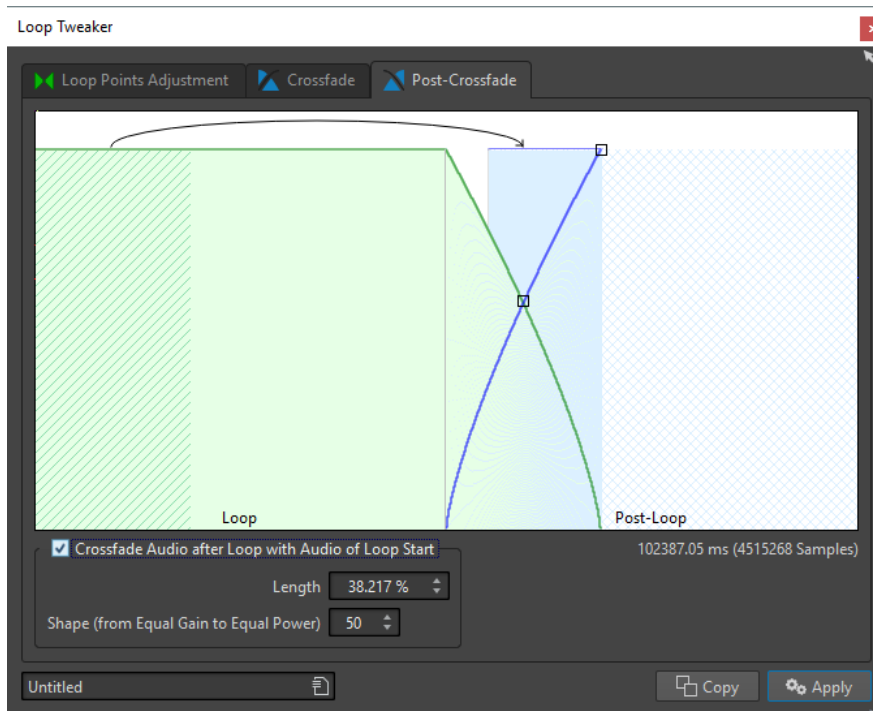
Crossfade Audio after Loop with Audio of Loop Start

To enable crossfading, activate this checkbox. The crossfade is applied when you click **Apply**.

Length

Determines the length of the crossfade. Generally, you want the post-crossfade to be as short as possible, with an acceptable result.

> NOTE
>
> - Using a long post-crossfade smoothens the loop. However, more of the waveform is processed, which changes its character.
> - A shorter post-crossfade affects the sound less, but the loop is not as smooth.

Shape (from Equal Gain to Equal Power)

Determines the shape of the post-crossfade. Use low values for simple sounds and high values for complex sounds.

Refining Loops

You can refine loops using the **Loop Tweaker** dialog.

PROCEDURE

1. In the **Audio Editor**, create a basic loop using a pair of loop markers.
2. Click between the loop start and loop end marker of the loop that you want to refine.
3. Select the **Process** tab.
4. In the **Loop** section, click **Tweaker**.
5. In the **Loop Tweaker** dialog, refine your loop.
6. Click **Apply**.

Moving Loop Points Manually

If your loop still has glitches or bumps at the transition points, you can use the **Loop Tweaker** dialog to move the points in small steps to remove the glitch.

This is similar to moving the loop points in the wave display, but with a visual feedback to facilitate finding good loop points.

There are two ways of moving the loop points manually on the **Loop Points Adjustment** tab in the **Loop Tweaker** dialog:

- Drag the waveform to the left and right.
- Use the blue arrows below the waveform to nudge the audio to the left and right. Each click moves the loop point by a single sample.

The following applies when moving the loop points manually:

- To move the end point to a later or earlier position, move the left part of the display.
- To move the start point to a later or earlier position, move the right part of the display.
- To move the start and end points simultaneously, activate **Link Start and End Points**. This way, when adjusting a loop point, the length of the loop stays the same, but the entire loop is moved.
- You can also adjust the loop markers in the wave window.

Automatically Detecting Good Loop Points

The **Loop Tweaker** dialog can automatically search for good loop points.

PROCEDURE

1. In the **Audio Editor**, select the loop that you want to refine by clicking between its loop start and loop end marker.
2. Select the **Process** tab.
3. In the **Loop** section, click **Tweaker**.
4. In the **Loop Tweaker** dialog, on the **Loop Points Adjustment** tab, make sure that **Link Start and End Points** is deactivated.
5. In the **Automatic Search** section, specify the **Aimed Correspondence** and the **Search Accuracy**.
6. Click the white arrow buttons to start the automatic search for a good loop point.

   WaveLab Elements scans from the current point forwards or backwards, until it finds a point that matches. You can stop at any time by clicking the right mouse button. The program then jumps back to the best found match.
7. Check the loop by playing it back.
8. Optional: If you think there might be a better loop point, continue with the search.

Temporarily Saving Loop Points

Temporarily saving and restoring loop points allows you to compare different loop settings.

PREREQUISITE

Set up a basic loop and open the **Loop Tweaker** dialog.

NOTE

- There are five slots for temporarily saving loop points for each wave window and montage window. If you have several sets of loops in your file, you must be careful to not recall the wrong set.

- Only loop positions are temporarily saved.

PROCEDURE

1. On the **Loop Points Adjustment** tab, in the **Temporary Memories** section, click **M**.

2. Select one of the five memory slots.

Crossfades in Loops

Crossfading is useful to create smooth transitions between the end of a loop and its beginning, especially when using material that is not perfectly suited to create a loop.

Sometimes it is impossible to find a loop that does not cause any glitches. This is especially true for stereo material, where you might be able to find a perfect candidate for only one channel.

In this case crossfading smears the material around the end loop point so that it loops perfectly. This is achieved by mixing material from before the loop start with material that is located before the loop end.

NOTE

This technique alters the waveform and therefore changes the sound.

Creating a Crossfade

PROCEDURE

1. In the **Audio Editor**, create as good a loop as you can.

2. Select the **Process** tab.

3. In the **Loop** section, click **Tweaker**.

4. In the **Loop Tweaker** dialog, decide if you want to create a crossfade or a post-crossfade:

   - If you want to create a crossfade, click the **Crossfade** tab.

   - If you want to create a post-crossfade, click the **Post-Crossfade** tab.

5. Make sure that **Crossfade Audio at End of Loop with Audio before Loop** (**Crossfade** tab) or **Crossfade Audio after Loop with Audio of Loop Start** (**Post-Crossfade** tab) is activated.

6. Specify the length for the crossfade either by dragging the length handle or by adjusting the **Length** value below the graph.

7. Specify the crossfade shape by dragging the shape handle or by adjusting the **Shape (from Equal Gain to Equal Power)** value.

8. Click **Apply**.

The sound is processed. Each time that you click **Apply**, the previous loop process is automatically undone. This allows you to try out different settings quickly.

NOTE

Do not move the loop points after you have performed a crossfade. The waveform has been processed specifically for the current loop settings.

AFTER COMPLETING THIS TASK

● You can check the crossfade visually by opening the **Loop Points Adjustment** tab and activating **Display Processed Audio**. If this is activated, the display shows a preview of the crossfaded waveform. If this option is deactivated, the display shows the original waveform. Switching back and forth allows you to compare the two.

Post-Crossfades

Post-crossfading means crossfading the loop back into the audio after the end of the loop so that there is not glitch when playback continues after the loop. This is done by mixing a copy of the loop back into the audio.

The post-crossfade can be set up on the **Post-Crossfade** tab of the **Loop Tweaker** dialog.

The post-crossfade analyzes the part of the waveform that occurs just after the loop start and processes a specific area that begins at the end of the loop. The length parameter adjusts the size of this area. Everything else is identical with regular crossfading.

Looping Audio Which Is Not Very Well Suited for Looping

Sounds that constantly decay in level or continuously change in timbre are difficult to loop. The **Loop Tone Uniformizer** dialog allows you to create loops from these kinds of sounds.

The **Loop Tone Uniformizer** applies processing to the sound that evens out changes in level and timbral characteristics in order for a sound to loop properly. For example, this is useful for creating looped samples for a softsynth or hardware sampler.

The **Loop Tone Uniformizer** includes a crossfade option allowing you to fade in the original sound into the processed sections when playback approaches the loop start.

To use the **Loop Tone Uniformizer**, you must have created a loop by setting a pair of loop markers. The original length of the loop is not changed.

Loop Tone Uniformizer Dialog

This dialog allows you to create sounds that loop from audio which is not very well suited for looping. These are normally sounds that constantly decay in level or continuously change in timbre.

● To open the **Loop Tone Uniformizer** dialog, open the **Audio Editor**, select the **Process** tab, and in the **Loop** section, select **Tone Uniformizer**.

Uniformizers Tab

This tab allows you to specify the methods that are used to even out the sound that you want to loop.
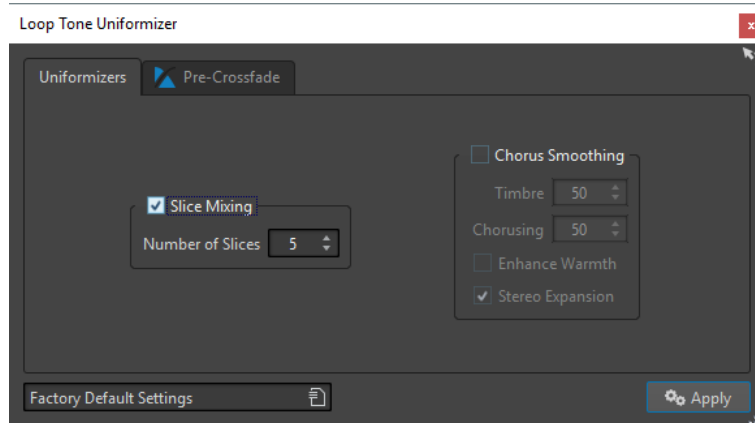
Slice Mixing

Splits the loop in slices, which are then mixed together to uniformize the sound.

For slice mixing, you need to determine the number of slices. Only experimentation can tell how many slices are needed, but generally, the more slices you have, the more natural the sound. However, the program puts a restriction on the number of slices, so that each one is never shorter than 20 ms.

For example, if you specify eight slices, the loop is split into eight sections of equal length. These sections are then overlapped and mixed together as one sound which is repeated eight times. This new piece of audio replaces all audio inside the loop so that no harmonic cancellation due to phase offsets occurs.

Slice Mixing – Number of Slices

The more slices you use, the more the sound changes.

Chorus Smoothing

This processor uses a phase vocoding method to filter the harmonics. This method is recommended for looping ensemble and choir sounds and can drastically change the timbre.

Chorus Smoothing – Timbre

Governs the amount by which the timbral characteristics of the sample should be evened out. The higher the value, the more pronounced the effect.

Chorus Smoothing – Chorusing

Determines the depth of the chorus effect.

Chorus Smoothing – Enhance Warmth

Creates a smoother, warmer sounding effect.

Chorus Smoothing – Stereo Expansion

Increases the width of the sample in the stereo sound image.

Pre-Crossfade Tab

This tab allows you to crossfade the end of the loop with the start of the newly processed section so that the transition into the looped section is smoother during playback. Use the envelope drag points or value sliders to adjust the crossfade.

You need to use this feature because the **Loop Tone Uniformizer** changes the timbre only inside the loop. This means that the transition into the loop is not as smooth as expected unless you apply crossfading.
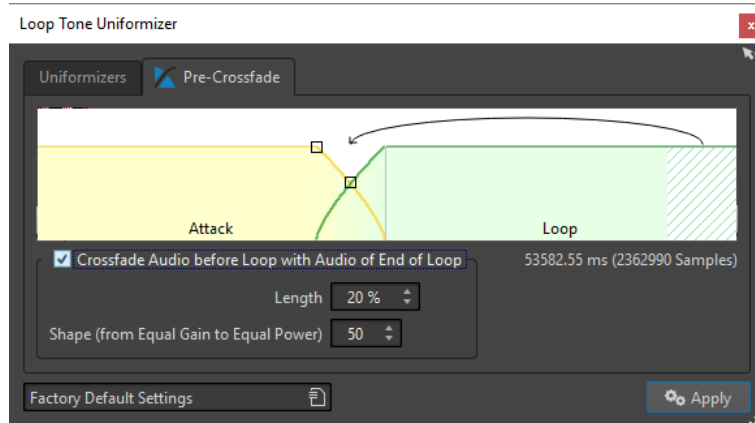
Crossfade Audio before Loop with Audio of End of Loop

Enables crossfading, which is applied when you click **Apply**.

Length

Determines the length of the crossfade. Generally, you want the post-crossfade to be as short as possible, with an acceptable result.

- A long crossfade produces a smoother loop. However, more of the waveform is processed, which changes its character.
- A shorter crossfade affects the sound less, but the loop is not as smooth.

Shape (from Equal Gain to Equal Power)

Determines the shape of the crossfade. Use low values for simple sounds and high values for complex sounds.

Looping Seemingly Unloopable Audio

PROCEDURE

1. In the **Audio Editor**, create a basic loop using a pair of loop markers.
2. Click between the loop start and loop end marker of the loop that you want to refine.
3. Select the **Process** tab.
4. In the **Loop** section, click **Tone Uniformizer**.
5. In the **Loop Tone Uniformizer** dialog, make sure that either **Slice Mixing** and/or **Chorus Smoothing** is activated and make the settings.
6. Optional: Select the **Pre-Crossfade** tab, and set up a crossfade.
7. Click **Apply**.

   The sound is processed. Each time that you click **Apply**, a new loop is defined. This allows you to try out different settings quickly.

   NOTE

   Do not move the loop points after you have performed a crossfade. The waveform has been processed specifically for the current loop settings.

AFTER COMPLETING THIS TASK

After using the **Loop Tone Uniformizer** dialog, the transition between the end of the loop and the end of the file might not sound very natural. This can be fixed by creating a post-crossfade using the **Loop Tweaker** dialog.

Sample Attributes

Sample attributes allow you to define settings for an audio sample before loading it into a hardware or software sampler.

Sample attributes do not process the sample, they just provide the file properties that the receiving sampler can use. This includes information about the pitch of the sample, which can be detected automatically, the key range that the sample should span, and the velocity range to occupy. For WAV and AIFF files, this information is saved in the header of the file. By default, there are no sample attributes in an audio file.

NOTE

Depending on your sampler and the protocol that you use for communicating, the sample attributes may not be supported.

Editing Sample Attributes

PROCEDURE

1. Open the **Audio Editor**.

2. Select **Tool Windows** > **Sample Attributes**.

3. In the **Sample Attributes** window, click **Create**.

4. Optional: If you want to automatically detect the pitch of an audio selection, select an audio range, and select **Detect from Audio Selection**.

5. Specify the sample attributes.

6. Save the audio file to save the sample attributes settings in the audio file.

   The sample attribute is only saved in WAV and AIFF files.

Sample Attributes Window

In this window, you can create sample attributes for an audio sample.

- To open the **Sample Attributes** window, open the **Audio Editor** and select **Tool Windows** > **Sample Attributes**.
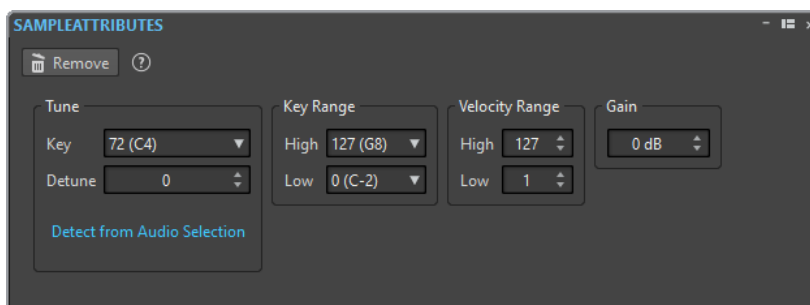
Create/Remove

Creates/Removes sample attributes for the active audio file.

Tune – Key

Specifies which key plays back the sound at its basic pitch.

Tune – Detune

Specifies whether the sample should be played back at a slightly different pitch. The range is ±50% of a semitone, which translates into a quarter tone in each direction.

Detect from Audio Selection

Detects the pitch from an audio selection. Make sure that the audio selection contains a clearly defined pitch.

Key Range – High/Low

Specifies the key range for the sample if the sample is part of a multi-sample key map.

Velocity Range – High/Low

Specifies the velocity range for the sample if the sample is part of a multi-sample key map with velocity-switchable samples.

Gain

For WAV and AIFF files, you can specify the sample attribute gain. This option does not affect the playback volume.

Audio CD Import

You can read audio tracks from regular CDs and save them as a digital copy in any audio format on your hard disk.

Although WaveLab Elements supports a large number of CD drives, there are some restrictions you need to be aware of:

- There are a number of different protocols for retrieving audio from a CD-ROM/CD-R drive. WaveLab Elements supports as many of these methods as possible, but there are no guarantees that it works with any particular drive. This applies for CD-Text and ISRC.
- Observe and respect any copyright notices on the CDs from which you are importing tracks.

When importing tracks, they are named "Track XX" by default, where XX is a number starting at 01. The numbering scheme can be changed.

NOTE

Importing audio CD tracks is technically more complicated than reading files from a CD-ROM or hard disk, because audio sectors can be hard to detect. Some CDs which do not conform completely to the CD standard may cause problems, especially when they are copy protected.

RELATED LINKS

Import Audio CD Dialog

In this dialog, you can import one or more tracks from an audio CD.

- To open the **Import Audio CD** dialog, select **File** > **Import**, and click **Audio CD**.
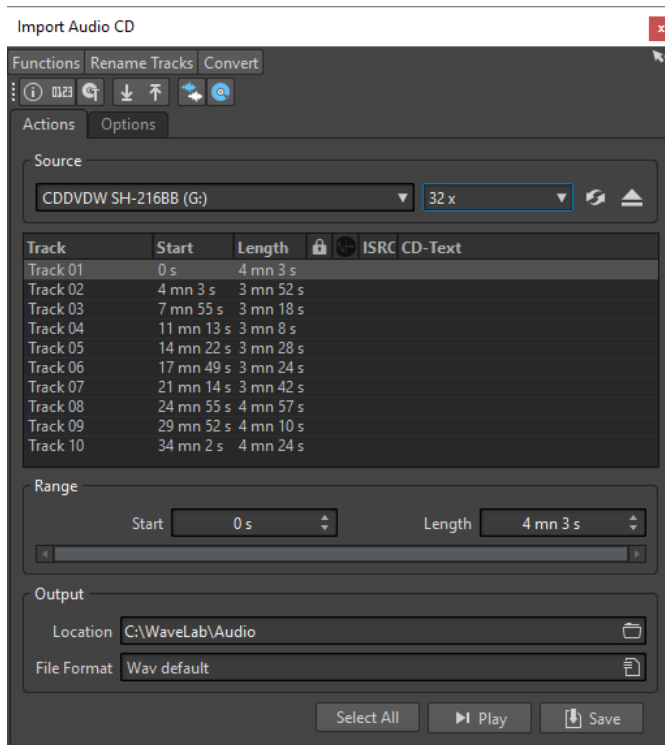
Functions Menu

CD Info

Displays the CD length and the UPC/EAN code, if available.

Extract ISRC Codes

Reads the ISRC codes and displays them in the track list. Depending on your CD drive, this can take a while.

Examine CD-Text

Opens the **CD-Text** dialog where you can view the CD-Text. Not all CD drives support CD-Text.

Extract CD-Text

Extracts the CD-Text and displays a summary in the track list.

Rename Tracks Menu

Name

Renames the tracks according to the selected renaming scheme.

Search Track Names on the Internet (gnudb)

Searches track names from an Internet database. If the album is found, the CD track list is updated.

Submit Track Names to the Internet (gnudb)

Submits the information about the audio CD to the gnudb database of CD information.

Convert Menu

Convert All Tracks to Audio Montage

Extracts all audio CD tracks and uses them to create an audio montage.

Convert Selected Tracks to Audio Montage

Extracts the selected audio CD tracks and uses them to create an audio montage.

Actions Tab

Source

Select the CD drive from which you want to import audio CD tracks.

Speed

Allows you to set the writing speed. The highest speed depends on your writing device and on the disc present in the device.

Refresh

If you insert a CD while the **Import Audio CD** dialog is open, you need to click this button to show the contents of that CD in the list.

Eject Optical Medium

Ejects the medium from the selected drive.

Track List

Shows the tracks on the CD.

Range – Start/Length

If you want to import only a section of a track, use the **Start** and **Length** fields to define a start point and length.

Output – Location

Allows you to set the output location.

Output – File Format

Allows you to set the output file format.

Select All

Selects all CD tracks in the track list.

Play

Plays back the selected CD track.

Options Tab

Trim Silence

If this option is activated, silence between imported tracks is removed. Only digital silence is removed, that is, samples with a zero level.

Automatically Refresh on CD Change

If this option is activated, WaveLab Elements checks for the presence of a new CD in the drive several times a second. If a new CD is found, the track list display is refreshed.

Automatically Extract ISRC Codes

If this option is activated, ISRC codes are automatically extracted when a CD is inserted.

Automatically Extract CD-Text

If this option is activated, CD-Text is automatically extracted when a CD is inserted.

Automatically Search Track Names on the Internet

If this option is activated, track names are automatically searched on the Internet when a CD is inserted.

Grab Pause before First Track (If Available)

If this option is activated, when a section of audio is located before the first track, it is extracted together with the first track. This way, you can import hidden bonus tracks.

Use a Japanese CD-Text Decoder

If this option is activated, CD-Text is interpreted as Japanese the next time it is extracted.

Create Peak File

If this option is activated, a peak file is created together with the rendered files.

Show Times with CD Frame Units

If this option is activated, times are shown in CD frame units. There are 75 CD frames per second.

Play through Master Section

If this button is activated, the **Master Section** is ignored. If the button is deactivated, the audio is played through the **Master Section**.

Convert Titles and CD-Text to Metadata

If this option is activated when importing tracks into an audio format supporting metadata (for example, MP3 and WMA), the titles of the tracks and the CD-Text are automatically added to the file header.

Ultra-Safe Mode (Slow)

If this option is activated, each CD track is read several times until the same result is found (checksums are used). Specify the number of times that a track must be read with the same result before it is saved to disk.

Real Audio Before and After Tracks

You can ensure that tracks are imported in their entirety by defining how much audio should be read before and after each CD track.

RELATED LINKS

Importing Audio CD Tracks

You can import audio from audio CDs into WaveLab Elements projects.

PROCEDURE

1. Insert a CD into the CD-ROM/CD-R device.
2. Select **File** > **Import**.
3. Click **Audio CD**.
4. In the **Import Audio CD** dialog, in the **Source** section, select the drive from which you want to read, and specify the read speed.
5. Optional: Rename the files and adjust the numbering scheme.

   The tracks must have unique names if you want to import them all.
6. Optional: On the **Options** tab, in the **Read Audio Before and After Tracks** section, define how much audio should be read before and after each CD track.
7. In the track list, select the tracks that you want to import.

8. Optional: If you have only selected one file, in the **Range** section, you can define a **Start** and **Length**, to import just a part of the track.

9. In the **Output** section, click the folder icon, and select an output location.

   You can also drag one or more CD tracks onto an audio montage track.

10. In the **Output** section, click the file format field, and select a file format for the imported audio files.

11. Click **Save**.

RESULT

The tracks are imported to the specified location.

RELATED LINKS
Import Audio CD Dialog on page 335

Searching Track Names on the Internet

You can search for information about your CDs using the gnudb database of CD information.

PREREQUISITE

You must be connected to the Internet to use the gnudb function.

PROCEDURE

1. Insert a CD into the CD-ROM/CD-R device.

2. Select **File** > **Import**.

3. Click **Audio CD**.

4. In the **Import Audio CD** dialog, select **Rename Tracks** > **Search Track Names on the Internet (gnudb)**.

RELATED LINKS
Import Audio CD Dialog on page 335

Submitting Track Names to the Internet

You can submit information about an audio CD to the gnudb database of CD information.

PREREQUISITE

You must be connected to the Internet to use the gnudb function.

PROCEDURE

1. Insert a CD into the CD-ROM/CD-R device.

2. Select **File** > **Import**.

3. Click **Audio CD**.

4. In the **Import Audio CD** dialog, rename each track.

5. Select **Rename Tracks** > **Submit Track Names to the Internet (gnudb)**.

6. In the **Submit CD Information** dialog, fill out the text fields and enter an email address.

> **NOTE**
>
> You require an email address to report submission errors. It will not be saved.

The gnudb database does not offer the possibility to enter different artists or genres for individual tracks. If the artists differ from track to track, you can write the track title in the following way: **Title/Artist**.

7. Click **OK**.

RELATED LINKS
[Import Audio CD Dialog](#) on page 335

Ultra-Safe Mode

Sometimes, a small bit of a CD track is not properly retrieved which results in unpleasant clicks and pops in the audio. This depends on the quality of your CD drive. To solve this issue, you can activate the **Ultra-Safe Mode** in the **Import Audio CD** dialog options.

If this option is activated, you can specify how many times each CD track must be read with the same result, before it is saved to disk.

RELATED LINKS
[Import Audio CD Dialog](#) on page 335

Converting Audio CD Tracks to an Audio Montage

You can convert audio CD tracks to an audio montage.

PROCEDURE

1. Insert a CD into the CD-ROM/CD-R device.

2. Select **File** > **Import**.

3. Click **Audio CD**.

4. Optional: In the **Import Audio CD** dialog, on the **Options** tab, select which information you want to extract from the Audio CD when converting.

5. Decide whether to convert only selected tracks or all tracks.

    - To convert only selected tracks, select **Convert** > **Convert Selected Tracks to Audio Montage**.

    - To convert all tracks, select **Convert** > **Convert All Tracks to Audio Montage**.

RESULT

When the conversion is finished, the imported files open in the **Audio Montage** window.

RELATED LINKS
[Import Audio CD Dialog](#) on page 335

Video

WaveLab Elements allows you to add video files to your audio montage. You can play back video files in various formats from within WaveLab Elements, extract the audio from a video file, and edit your audio alongside the video.

RELATED LINKS
Video File Compatibility on page 346
Video Track on page 341
Video Window on page 345

Video Track

The video track in the audio montage allows you to add video files to your audio montage.

The imported video file is displayed as a clip on the video track. Thumbnails represent the frames in the film. The audio file that contains the audio for the video is positioned on a new audio montage track below the video track.

You can import multiple video files of different formats on the same video track. There can only be one video track per audio montage.
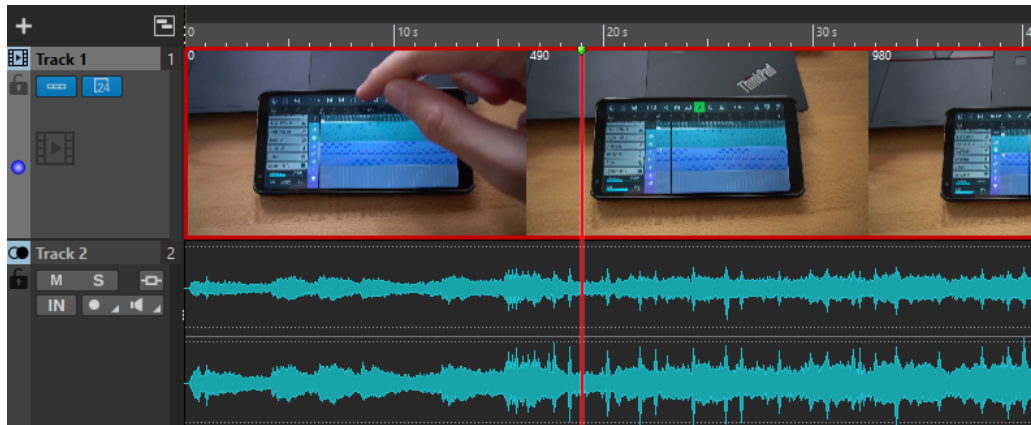
RELATED LINKS
Edit Audio Extracted from Video on page 343
Adding Video Tracks on page 341
Inserting Video Files into Existing Audio Montages on page 342
Importing Video Files into a New Audio Montage on page 342
Tracks on page 198

Adding Video Tracks

You can add one video track per audio montage.

PROCEDURE

● In the **Audio Montage** window, do one of the following:

  ● Click **+** at the top of the track control area and select **Video Track**.

● Right-click the track control area to open the **Track** pop-up menu and select **Add Track** >
Video Track.

RESULT

By default, the new track is added below the active track. If you want to place it above the active
track, press **Ctrl/Cmd** when adding the new track.

RELATED LINKS
Track Control Area on page 178

Inserting Video Files into Existing Audio Montages

You can insert video files to your audio montage.

CHOICES

● In the **Audio Montage** window, select the **Insert** tab and click **Video File** in the **Import**
section. Select the video file that you want to insert and click **Open**.

The video track is automatically created.

● Drag the video file that you want to insert from the **File** window onto the video track.

● Drag the video file that you want to insert from the File Explorer/macOS Finder onto the
video track.

RESULT

The video file is inserted into the audio montage.

> NOTE

If the sample rate of the included audio does not match the sample rate of your audio montage,
the **Mismatched Sample Rates** dialog opens. This dialog allows you to create a resampled copy
of the audio.

RELATED LINKS
Adding Video Tracks on page 341
Importing Video Files into a New Audio Montage on page 342
Mismatched Sample Rates Dialog on page 205

Importing Video Files into a New Audio Montage

You can import video files as video clips into a new audio montage.

PROCEDURE

1. Select **File** > **Import** > **Video**.

2. Select the video file that you want to import and click **Import**.

RESULT

The imported video file is displayed as a clip on the video track. Thumbnails represent the frames
in the film. The audio file that contains the audio for the video is placed on a new audio montage
track below the video track.

Edit Audio Extracted from Video

You can edit the audio track of a video track. When you import a video file, its audio is extracted and placed on a new audio montage track below the video track.

After editing the audio from the video, you can render the audio montage to replace the original audio with the edited audio.

To find out which embedded audio formats are supported, refer to the Steinberg Support on the Steinberg web site.

RELATED LINKS
Replacing Audio in Video on page 343

Replacing Audio in Video

You can replace the audio track of a video with another audio file or an edited version of the original audio. You can replace the whole audio track or parts of it.

PREREQUISITE
You have added the video file that contains the audio to be replaced to your audio montage.

PROCEDURE

1. Do one of the following:
   - If you want to replace the audio of the video with an edited version of the original audio, edit the original audio file.
   - If you want to replace the original audio of the video with other audio, delete the audio on the original audio track and add the new audio.

   When you have finished editing the audio, you can render the audio montage to create a video with the new audio.

2. Select the video track.

3. Select the **Render** tab.

4. On the **Source** menu, select **Range of Active Video Clip**.

5. In the **Output** section, specify a **Name** and a **Location** for the rendered video file.

   NOTE

   The rendered video file keeps the file format of the original video. The video is not re-rendered, which means that there is no quality loss in this process.

6. In the **Options** section, click **Options** and do one of the following:
   - To create a copy of the original video with the edited audio, activate **Create Video with the Resulting Audio**.
   - To open the rendered video in a new audio montage, activate **Reimport Video in New Audio Montage**.
   - To open the rendered audio file of the video file in the **Audio Editor**, activate **Open Rendered Audio File**.

7. In the **Render** section, click **Start Rendering**.

Video Clip Editing

A video clip is created automatically when you import a video file to an audio montage.

NOTE

Before starting to edit and refine the audio of your video file, you should have finished editing your video with a dedicated video editor.

When working with video clips, you can make the following edits:

- To copy a video clip, click the upper area of a video clip and drag it to the new location.
- To trim the end of your video clip, click the end and drag to the left.
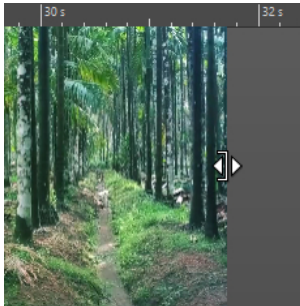
- To disable all editing for video clips, click **Lock** in the track control area for the video track.

- To edit the audio clip of your video clip, use the audio editing tools of WaveLab Elements.

Video Follows Edit Mode

The **Video Follows Edit Mode** allows you to edit audio while getting continuous visual feedback in the **Video** window.

- To activate **Video Follows Edit Mode**, select the **Edit** tab, and activate **Video Follows Edit Mode** in the **Clip** section.

If you activate **Video Follows Edit Mode**, the video in the **Video** window automatically follows each edit that you make. This allows you to instantly see where in the video your edit is taking place.

In **Video Follows Edit Mode**, the **Video** window gives you visual feedback. That is, the picture matches the edit cursor position. You get visual feedback during the following actions:

- Selecting ranges and adjusting range borders

- Moving audio clips

- Nudging audio clips

- Resizing audio clips or range selections

- Adjusting audio clip fade handles

RELATED LINKS
Video Window on page 345
Edit Tab (Audio Montage) on page 185

Video Window

If you import a video to your audio montage and start playback, the video plays back in the **Video** window. You can resize the **Video** window and undock it to place it on another screen, for example.

- To open the **Video** window, select **Tool Windows** > **Video**.

NOTE

For the best performance, undock the **Video** window and use it in an independent window.

RELATED LINKS
Video Track on page 341
Activating/Deactivating the Video Track Timecode on page 345

Activating/Deactivating the Video Track Timecode

The timecode in the **Video** window represents time using hours, minutes, seconds, and frames to provide a location for each device. Each frame represents a visual film or video frame.

PROCEDURE

1. Select **File** > **Preferences** > **Audio Montages**.

2. Click **All Audio Montages**.

3. In the **Video Window** section, activate/deactivate **Show Timecode**.

Video File Compatibility

When working with video files in WaveLab Elements, you must make sure that the video file type is supported.

NOTE

If you are not able to play back a specific video file, use an external application to convert the file into a compatible format.

To find out what video files are supported, refer to the Help Center on the Steinberg web site.

RELATED LINKS
Video Container Formats on page 346
Video Codecs on page 346
Video Frame Rates on page 347

Video Container Formats

Video and other multimedia files come in a container format.

This container holds various streams of information including video and audio, but also metadata such as synchronization information required to play back audio and video together. Data regarding creation dates, authors, chapter markings, and more can also be held within the container format.

The following container formats are supported by WaveLab Elements:

MOV

This is a QuickTime movie.

MPEG-4

This format can contain various metadata for streaming, editing, local playback, and interchange of content. Its file extension is .mp4.

AVI

This is a multimedia container format introduced by Microsoft.

RELATED LINKS
Video File Compatibility on page 346
Video Codecs on page 346

Video Codecs

Codecs are methods of data compression used to make video and audio files smaller and more manageable for computers. For further details, refer to the Help Center on the Steinberg web site.

RELATED LINKS
Video File Compatibility on page 346
Video Container Formats on page 346

Video Frame Rates

WaveLab Elements supports different video and film frame rates. The video frame rate must match the audio montage frame rate.

WaveLab Elements automatically adopts to the frame rate of the imported video. You can also manually adjust the frame rate via the **Time Format** dialog.
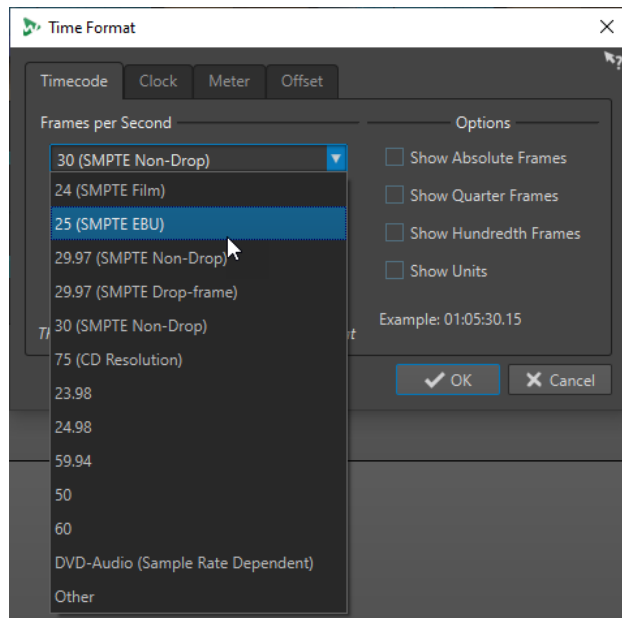
The following frame rates are supported:

Frames Per Second

Regardless of the frame counting system, the actual speed at which frames of video go by in real time is the true frame rate.

WaveLab Elements supports the following frame rates:

23.98 fps

This frame rate is used for film that is being transferred to NTSC video and must be slowed down for a 2-3 pull-down telecine transfer. It is also used for the type of HD video referred to as 24 p.

24 fps

This is the true speed of standard film cameras.

24.98 fps

This frame rate is commonly used to facilitate transfers between PAL and NTSC video and film sources. It is mostly used to compensate for errors.

25 fps

This is the frame rate of PAL video.

29.97 fps/29.97 dfps

This is the frame rate of NTSC video. The count can be either non-drop or drop-frame.

30 fps/30 dfps

This frame rate is not a video standard anymore but has been commonly used in music recording. It used to be the black and white NTSC broadcast standard. It is equal to NTSC video being pulled up to film speed after a 2-3 telecine transfer. The count can be either non-drop or drop-frame.

50 fps

This rate is also referred to as 50 p.

59.94 fps

This video frame rate is supported by high definition cameras and is compatible with NTSC.

60 fps

This video frame rate is supported by many high-definition cameras. However, the NTSC compatible 59.94 fps frame rate is much more common.

IMPORTANT

Video formats with a variable frame rate (VFR) are not supported.

RELATED LINKS

WaveLab Exchange

You can use WaveLab Elements as an external editor for Cubase Pro, Cubase Artist, and Nuendo, and vice versa.

IMPORTANT

- WaveLab Exchange is only available for Cubase Pro 8.5.10 or higher, Cubase Artist 8.5.10 or higher, and Nuendo 7.1.20 or higher.
- WaveLab Exchange supports the file format Wave.

WaveLab Elements as External Editor for Cubase/Nuendo

You can open Cubase/Nuendo events in WaveLab Elements. This allows you to use the editing capabilities of WaveLab Elements and apply them to Cubase/Nuendo events.

For example, the following advanced editing options are available in WaveLab Elements:

- Audio error correction
- Independent channel editing and processing
- Analysis meters, global analysis (EBU R-128 recommendation), and 3D frequency analysis
- RestoreRig
- MasterRig

Editing Cubase/Nuendo Audio Events in WaveLab Elements

PREREQUISITE
Open your Cubase/Nuendo project in Cubase/Nuendo.

PROCEDURE

1. In the Cubase/Nuendo **Project** window, select the audio event that you want to edit in WaveLab Elements.
   You can also select only a part of the audio event with the **Object Selection** tool.
2. Select **Audio** > **Edit in WaveLab**.
3. In WaveLab Elements, edit the audio event.
4. When you have finished the editing, click **Trigger Cubase/Nuendo Update** on the command bar.
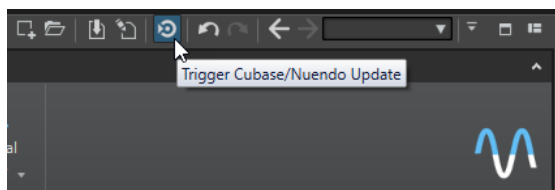
RESULT
The changes to the audio event are applied to the Cubase/Nuendo project.

Cubase/Nuendo as External Editor for WaveLab Elements

When you are working on an audio file or clip in WaveLab Elements, you can open the project of the audio file in Cubase/Nuendo. This allows you to correct issues that you have identified during mixing and correct these issues in the audio file in Cubase/Nuendo.

When you then export the audio file in Cubase/Nuendo, and you use the same file name, the audio file or clip is automatically updated in WaveLab Elements.

Preparing the Cubase/Nuendo Project for WaveLab Exchange

PROCEDURE

1. In Cubase/Nuendo, open the project that you want to prepare for WaveLab Exchange.

2. Select **File** > **Export** > **Audio Mixdown**.

3. In the **Export Audio Mixdown** dialog, specify a file name and path.

4. In the **File Format** pop-up menu, select **Wave File** or **Wave 64 File**.

5. Activate **Insert iXML Chunk**.

6. Click **Export**.

Editing the Audio File in Cubase/Nuendo

PREREQUISITE

The Cubase/Nuendo project is prepared for WaveLab Exchange.

PROCEDURE

1. In WaveLab Elements, open the audio file in the **Audio Editor**.

   A yellow line above the file tab indicates that the file has been rendered in Cubase/Nuendo.

2. Select the **Edit** tab.

3. In the **Source** section, click **Edit Project**.

   The Cubase/Nuendo project that contains the audio file opens.

4. In Cubase/Nuendo, edit the audio file.

5. Select **File** > **Export** > **Audio Mixdown**.

6. In the **Export Audio Mixdown** dialog, activate **Insert iXML Chunk**.

   IMPORTANT

   Do not change the file name and path.

7. Click **Export**.

RELATED LINKS
Preparing the Cubase/Nuendo Project for WaveLab Exchange on page 350
Tab Change Indicators on page 58

Batch Conversion

You can convert multiple audio files simultaneously to another format. If no processing is needed, this can be done using the **Batch Conversion** dialog.

RELATED LINKS

Batch Conversion Dialog

This dialog allows you to convert the file format of a group of audio files.

● To open the **Batch Conversion** dialog, select **File** > **Tools** > **Batch Conversion**.
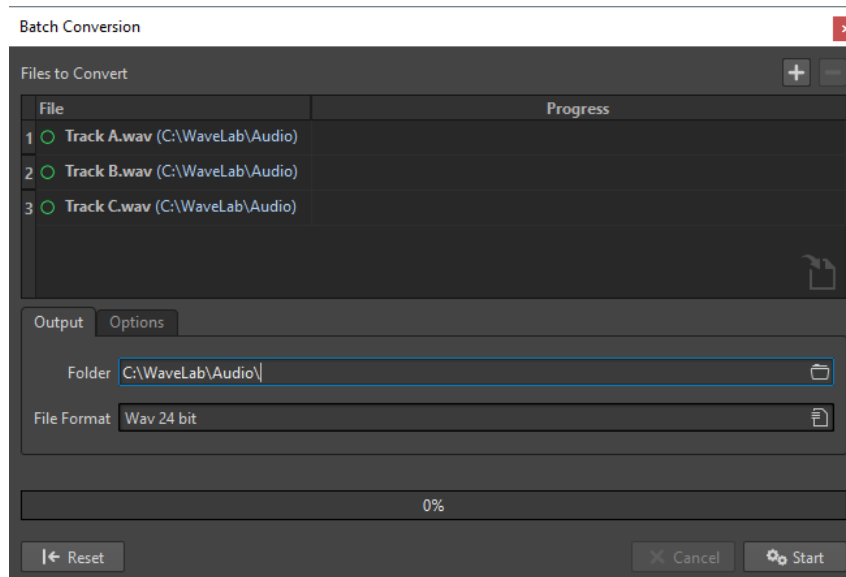
Add File

Opens a dialog, where you can select files to add to the list.

Remove Selected Files

Removes the selected item from the list.

Files to Convert

Shows the list of files to convert.

Output Tab

Folder

Allows you to specify the folder in which the converted files are saved.

File Format

Allows you to open the **Audio File Format** dialog, where you can set the file format.

Options Tab

Auto Start When Dropping Files

If this option is activated, the conversion starts automatically when you drag a file into the list.

Auto Remove Converted Files

If this option is activated, a file is removed from the list once it is successfully converted. Otherwise, it remains in the list with a green mark indicating its status.

Stop on Error

If this option is activated, the global process stops if an error is encountered. If this option is deactivated, the file associated with the error is marked in red, and the next file is processed.

RELATED LINKS

Batch Converting Files

You can convert multiple audio files to another format in a single batch operation.

PROCEDURE

1. Select **File** > **Tools** > **Batch Conversion**.
2. Click the plus icon to add files, or drag the files into the **Files to Convert** list.
3. On the **Output** tab, select a file location and a file format.
4. Click **Start** to begin converting the files.

RELATED LINKS

Podcast

A Podcast is an episodic series that consists of audio files. Users can stream or download Podcasts to their device and listen to it. WaveLab Elements with its audio editing tools and effects allows you to create Podcast episodes and upload these episodes to various host services.

You can use the **Audio Editor** and the montage window to create a Podcast episode. Each audio file or audio montage in WaveLab Elements can be uploaded as a Podcast episode.

Podcast Host Services

Podcast host services allow you to host and distribute Podcasts. WaveLab Elements allows you to directly upload your Podcast to various host services.

Supported Host Services

WaveLab Elements supports direct upload to the following host services:

- Spreaker
- Podbean
- SoundCloud
- Buzzsprout
- Castos
- Blubrry
- Captivate

Host Service Authorization

To connect WaveLab Elements with a host service, you must authorize the connection between WaveLab Elements and the host service.

The authorization process depends on the selected host service.

File Encoding before Uploading to Host Services

If the audio file or audio montage that you want to upload to a host service is a non-encoded audio file, you can encode the audio file. Some host services only accept encoded audio files. Encoded audio file formats are MP3, MP4, M4A, or MP2, for example.

The **Master Section** plug-ins and settings are taken into account when you render an audio file or audio montage.

Depending on the selected audio file or audio montage, the following applies:

● If the active audio file that you want to upload uses an encoded format, the **Encode Audio File** option is deactivated. Encoding already encoded audio files can lead to quality loss.

● If the active audio files uses a non-encoded format, the **Encode Audio File** option is available but not mandatory. However, depending on the host service it can be necessary to encode the audio file.

● Audio montages must be rendered before you can upload them to a host service. If the active file is an audio montage, you must use the **Encode Audio File** option to render the audio montage.

If the active audio file or audio montage has been saved, the encoded file is saved in the same directory, with the same name, and its proper file extension.

If the active audio file or audio montage has not been saved, a dialog opens and allows you to select a directory and a file name for the rendered file.

RELATED LINKS

Uploading a Podcast Episode

You can upload the audio that you have created in the **Audio Editor** or in the **Audio Montage** window as a Podcast episode.

PREREQUISITE
You have created an audio file or an audio montage.

PROCEDURE

1. In the **Audio Editor** or **Audio Montage** window, select the **Edit** tab.

2. In the **Podcast** section, click **Upload Episode**.
   The **Publish** tab opens.

3. In the **Host Service** section, select the host service to which you want to upload the episode.
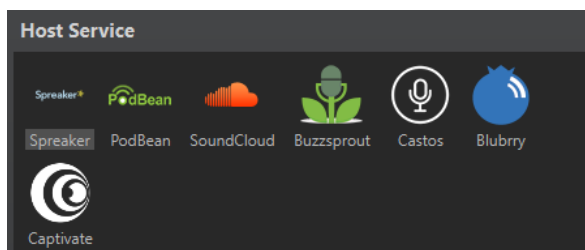
4. Click **Authorize** to allow WaveLab Elements to access the selected host service.
   Your default Internet browser opens the authorization website of the selected host service.

5. Follow the instructions in your browser to complete the authorization.

6. In WaveLab Elements, select the **Podcast** to which you want to add the Podcast episode.

7. Specify a **Title** for the Podcast episode.

8. Depending on the selected host service, it can be necessary to encode the audio file or audio montage. If you want to encode the audio file, activate **Encode Audio File** and select a new encoder.

9. Click **Upload**.

RESULT

The audio file or audio montage is rendered and uploaded to the selected host service.
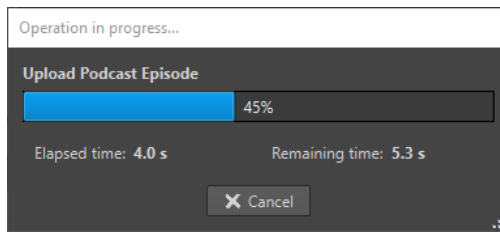
RELATED LINKS
Publish Tab on page 355
File Encoding before Uploading to Host Services on page 353

Publish Tab

The **Publish** tab allows you to select the host service to which you want to upload your Podcast episode. You can select different host services and select the encoder for the audio file that you want to upload.

- To open the **Publish** tab, select the **File** tab and select **Podcast** > **Publish**.

Host Service

Allows you to select the host service to which you want to upload your Podcast episode.

Authorize

Allows you to allow WaveLab Elements to access the selected host service.

If you click **Authorize**, your default Internet browser opens the authorization website of the selected host service.

Episode

- **Encode Audio File** allows you to encode the audio file to another audio file format.

  NOTE

  If you have selected an MP3 file for upload, the **Encode Audio File** option is deactivated. However, if you add effects to the MP3 file via the **Master Section**, the **Encode Audio File** option is available.

- **Podcast** allows you to select the Podcast to which you want to add the Podcast episode.
- **Refresh Available Podcasts** allows you to refresh the Podcast list that is retrieved from your Spreaker account.
- **Title** allows you to enter a title for the Podcast episode.

Upload

Allows you to upload the audio file to the selected host service.

RELATED LINKS
Podcast on page 353
Uploading a Podcast Episode on page 354

RSS Feed

Podcasting is a method of distributing multimedia files over the Internet, for example, for playback on mobile devices and personal computers. Podcasts are distributed via the RSS standard (Rich Site Summary).

RSS is a standard for distributing news and other information via the Internet. An RSS news feed sends short messages on a specific topic from a specific web site. In order to read the messages, the user employs a program that has the ability to monitor multiple feeds and automatically download new messages on a regular basis. This can be a special feed reader or an Internet browser, for example.

RELATED LINKS
Podcast on page 353

RSS Feed Editor

The **RSS Feed Editor** is divided into several tabs. The **Feed** and **Episodes** sections show the information for the feed or an episode, depending on the item that is selected in the list below. This is where you can add files, Internet links, or textual information to the RSS feed and its episodes. The Main section shows an item list of the basic feed and all episodes that are included in the RSS feed.
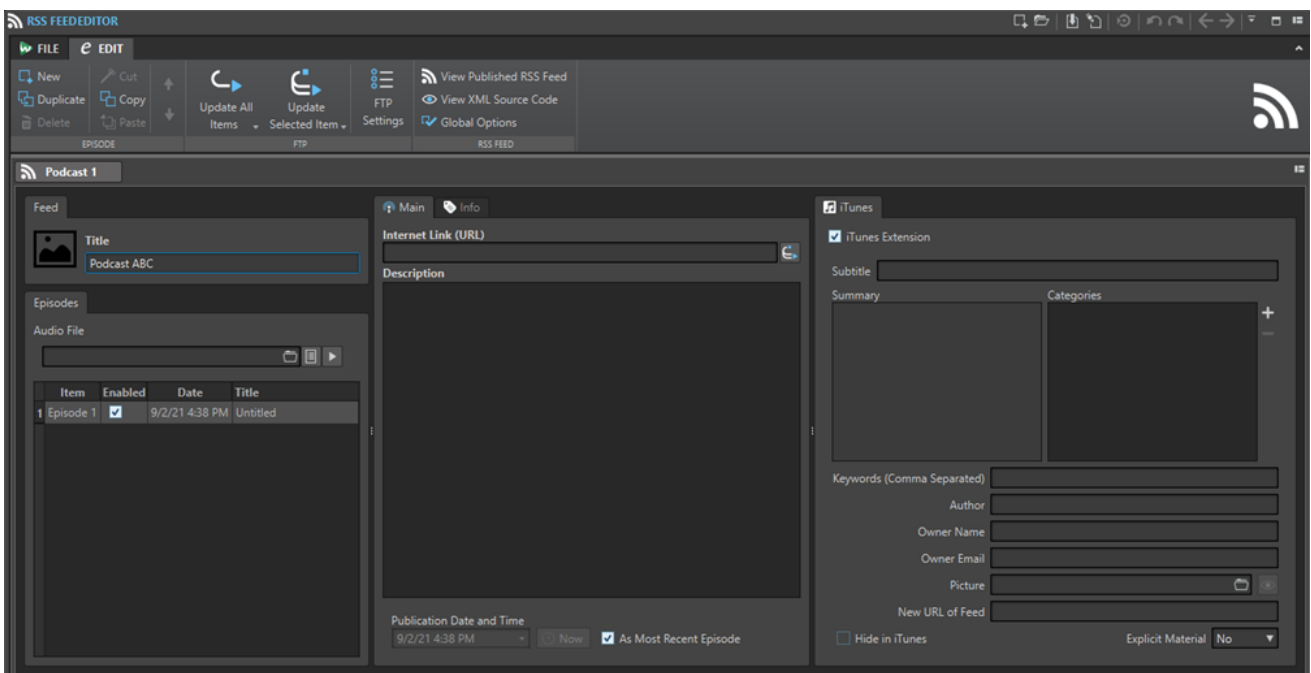
Episode

In the **Episode** section, you can create, delete, and move individual RSS feed episodes.

New

Adds a new untitled episode.

Duplicate

Adds a new episode, copying all the information from the existing episode to the new one.

Delete

Deletes the selected episode. Alternatively, you can exclude an episode from the RSS feed by deactivating **Enabled**.

Cut/Copy/Paste

Cuts, copies, and pastes the selected episode.

Move Up/Move Down

Moves the selected episode one position up or down in the list. Alternatively, use drag and drop.

FTP

In the **FTP** section, you can define where your RSS feed is going to be uploaded via FTP.

Update All Items

Uploads/Updates the XML RSS feed file on the FTP server. It also uploads all associated media files, but only if they are not yet available on the FTP server. This is the most common function to upload and update your RSS feed.

Update Selected Item

Uploads/Updates the XML RSS feed file on the FTP server. It also uploads the media file of the selected item in the list, but only if it is not yet available on the FTP server.

Upload/Replace All Items

This is the same as **Update All Items**, but it always uploads/replaces all of the media files belonging to the item. This is useful if you have changed the audio data, for example.

Upload/Replace Selected Items

This is the same as **Update Selected Item**, but it always uploads/replaces the media file of the selected item in the list. This is useful if you have changed the audio data, for example.

FTP Settings

Opens the **FTP Settings** dialog, which allows you to edit the FTP settings that are related to this RSS feed.

RSS Feed

In the **RSS Feed** section, you can check if publishing the RSS feed was successful and specify global options for the **RSS Feed Editor**.

View Published RSS Feed

Opens your RSS feed (via the URL that is specified in your FTP site settings) using your default browser.

View XML Source Code

Opens an XML editor to display the source code of the RSS feed.

Global Options

Edit the automatic picture resizing, set a time offset with Greenwich Mean Time, and specify the path of the HTML editor.

Feed

On the **Feed** tab, you can specify a title for your RSS feed.

Episodes

On the **Episodes** tab, you can specify titles for your episodes.

Main

On the **Main** tab, you can assign parameters to your RSS feed. The available parameters change, depending on whether you select a feed or an episode. Field labels in bold letters mark fields that are mandatory to fill.

Title

Sets the title of the feed, for example, the topic of your RSS feed.

Description

Gives space for a further description of the feed content.

Import HTML File (only available for episodes)

Lets you browse for an HTML document that replaces the description.

Internet Link (URL)

The main link of the feed that the user sees. Use this to direct people to a web site that is related to your feed. Clicking the world icon opens the specified URL in your default Internet browser.

Audio File (only available for episodes)

This sets the path to the audio file that you want to add to the episode. The audio file can be of any file type that is supported by the media reader of your browser. An MP3 file provides best compatibility. Click the icon to list the audio files that are already open in WaveLab Elements. Select one for your episode.

Alternatively, you can drag the list icon of an audio file into the audio file pane. Click the play icon to open the specified file in the default media player or viewer of your system, for previewing or checking purposes.

Picture (only available for feeds)

According to the RSS standard, this picture may not be larger than 144 x 400 pixels, so the picture is automatically resized. Clicking the picture icon opens the specified picture in your default image viewer of your system.

Picture icon

Publication Date and Time

Sets the publication date and time of the feed or episode. Clicking **Now** transfers the current date and time of your system.

As Most Recent Episode (only available for feeds)

If this option is activated, the date and time of the most recent episode are automatically matched.

Info

On the **Info** tab, you can assign parameters to your RSS feed. The available parameters change, depending on whether you select a feed or an episode.

The following parameters are available for a feed:

- Webmaster (Email Address)

- Editor (Email Address)

- Copyright

- Category

- Related Domain (URL)

- Language

- Frequency of Updates

- Skip Hours (0 to 23, Comma Separated)

- Time to Live (Number of Minutes)

The following parameters are available for an episode:

- Author (Email Address)

- Comments (URL)

- Category

- Related Domain (URL)

- Title

- Original Domain (URL)

iTunes

On the **iTunes** tab, you can activate the iTunes extension that allows you to specify additional feed and episode information. The available parameters change, depending on whether you select a feed or an episode.

The following parameters are available for a feed:

- Subtitle

- Summary

- Categories

- Keywords (Comma Separated)

- Author

- Owner Name

- Owner Email

- Picture

- New URL of Feed

- Hide in iTunes

- Explicit Material

The following parameters are available for an episode:

- Subtitle

- Summary

- Keywords (comma separated)

- Author

- Duration

- Hide in iTunes

- Explicit Material

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Global RSS Feed Options

Some additional options are valid for all **RSS Feed** tabs.

- To open the **Global RSS Feed Options** dialog, open the **RSS Feed**, select the **Edit** tab, and click **Global Options**.

Automatic Picture Resizing (Not for iTunes)

Defines what to do if specified pictures exceed the maximum size allowed by the RSS standard. If pictures need resizing, the original images on your hard disk are not modified.

Time Offset with GMT (Greenwich Mean Time)

The displayed dates and times are local. If your system is properly set up, WaveLab Elements automatically adjusts the time offset in relation to GMT. However, if you want to have time and date relative to a different time zone, adjust the value with this option.

HTML Editor

Sets the path to the external HTML editor that is launched when you click the pen button in the **Import HTML File** section. The option **Import HTML File** is only available for episodes.

Creating an RSS Feed

There are several ways to create a new RSS feed or episode.

- To create a new RSS feed, select **File** > **New** and click **Create RSS Feed**.
- To add a new untitled episode to an RSS feed, in the **RSS Feed**, select the **Edit** tab, and click **New**.
- To add an audio file to the selected episode, select the **Main** tab, click in the **Audio File** field, and select **Select File Using Standard Selector**. Select the audio file in the File Explorer/ macOS Finder and click **Open**.

  You can also drag an audio file from the **File Browser** window to the **Audio File** field.

- To duplicate the selected episode, select the **Edit** tab, and click **Duplicate**. This adds a new episode, and copies all information from the existing episode to the new one.

Setting Up an FTP for RSS Feed Publishing

To be able to upload a RSS feeds to your FTP server, you must enter the FTP server details first.

PROCEDURE

1. In the **RSS Feed Editor**, select the **Edit** tab.
2. In the **FTP** section, click **FTP Settings**.
3. In the **FTP Settings** dialog, enter the following details:

- The log-in details for your FTP server.

- The relative path and file name of the feed (extension `.xml`).

- Your web site address including the path to the feed.

4. Click **OK**.

FTP Settings Dialog

In the **FTP Settings** dialog, you can manage all required information for the RSS feed upload process.

- To open the **FTP Settings** dialog, open the **RSS Feed Editor**, select the **Edit** tab, and click **FTP Settings**.
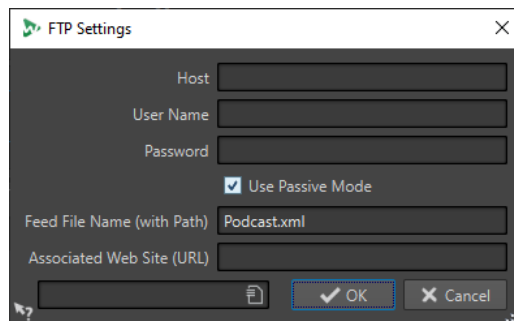
Host

The host name or IP address of the FTP server.

User Name

The login name to your FTP server.

Password

The password to the login.

Use Passive Mode

Keep this activated and only change this if you experience problems with the FTP connection.

Feed File Name (with Path)

The RSS file name that is displayed on your FTP server (extension `.xml`), including the relative path. File name and path are part of the final public Internet address of the RSS feed, so you may want to avoid long names.

Associated Web Site (URL)

Your own web site address including the path to the feed.

FTP Settings Example
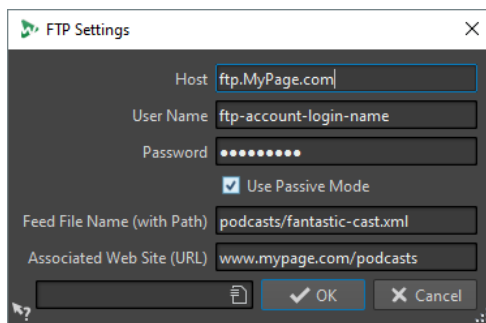
- Your FTP host address is "ftp.MyPage.com", your public web site address is "www.MyPage.com".

- The feed file name setting is "podcasts/fantastic-cast.xml", the associated web site setting is "www.MyPage.com/podcasts".

- The media files of the RSS feed will be uploaded to the FTP server at "ftp.MyPage.com/podcasts".

- The RSS feed file itself and the Internet address to be distributed will be found at "www.MyPage.com/podcasts/fantastic-cast.xml".

Each RSS feed saves its own complete FTP site information. It is also possible to save and recall FTP site presets using the **Preset** functions at the bottom of the dialog.

Publishing RSS Feeds

You can upload an RSS feed from within WaveLab Elements to your FTP server.

PREREQUISITE

Set up your FTP settings within WaveLab Elements.

PROCEDURE

1. In the **RSS Feed Editor**, select the **Edit** tab.

2. In the **FTP** section, select one of the following options:
    - Update All Items
    - Update Selected Item
    - Upload/Replace All Items
    - Upload/Replace Selected Items

3. In the **FTP Settings** dialog, check if the FTP settings are correct, and click **OK**.

RESULT

The RSS feed is uploaded to your FTP site.

RELATED LINKS
RSS Feed Editor on page 356
Setting Up an FTP for RSS Feed Publishing on page 360

Checking If Publishing the RSS Feed Was Successful

After creating and publishing an RSS feed, you can check if the upload was successful.

- To visualize the contents of the feed XML file in your default XML editor, open the **RSS Feed Editor**, select the **Edit** tab, and click **View XML Source Code**.

- To open your default Internet browser and receive the RSS feed that you have just published from the Internet, open the **RSS Feed Editor**, select the **Edit** tab, and click **View Published RSS Feed**.

RELATED LINKS

Customizing

Customizing means making settings so that the program behaves and looks the way that you want it to.

RELATED LINKS

Customizing the Wave Window and the Montage Window

You can set up the wave/montage window by adjusting colors of waveforms, background, cursor lines, etc., and changing the look of the ruler and other window details.

Customizing can be done in the following ways:

- By changing the default style.
- By assigning different styles, according to specific conditions. For example, a specific file type or a specific file name.

RELATED LINKS

Assigning Custom Colors to the Wave Window or the Montage Window

PROCEDURE

1. Depending on whether you want to customize the colors of the wave window or the montage window, do one of the following:
   - For the wave window, select **File** > **Preferences** > **Audio Files** and select the **Style** tab.
   - For the montage window, select **File** > **Preferences** > **Audio Montages** and select the **Style** tab.
2. Select the part that you want to color from the **Parts** list.
3. Specify a color using the color picker or the RGB fields.

RELATED LINKS

Assigning Custom Colors According to Conditions

You can apply different color schemes automatically to different clips, according to their names or the properties of their audio files.

IMPORTANT

If you redefine colors, be careful not to choose colors that cause other elements to disappear.

PROCEDURE

1. Depending on whether you want to customize the colors of the wave window or the montage window, do one of the following:

    ● For the wave window, select **File** > **Preferences** > **Audio Files** and select the **Style** tab.

    ● For the montage window, select **File** > **Preferences** > **Audio Montages** and select the **Style** tab.

2. Do one of the following:

    ● In the **Audio Files Preferences**, select one of the **Conditional** options from the pop-up menu at the top of the dialog.

    ● In the **Audio Montages Preferences**, in the **Parts** list, select one of the **Custom** entries.

3. Specify a color using the color picker or the RGB fields.

4. In the **This Style Is Used If These Conditions Apply** section, specify the conditions.

5. Click **OK**.

RELATED LINKS
Customizing the Wave Window and the Montage Window on page 364
Style Tab (Audio Files Preferences) on page 387
Style Tab (Audio Montages Preferences) on page 390
Copying Color Settings on page 365

Copying Color Settings

When you make color settings for the wave window or the montage window, you can copy the color settings of one part, or all parts of a custom color scheme.

PREREQUISITE

You can assign custom colors to the wave window and the montage window in the **Style** tab of the **Audio Files Preferences** and the **Audio Montages Preferences**.

CHOICES

● To copy a color setting, select the part from which you want to copy the color, and select **Copy Color**. Then select the part to which you want to copy the color, and select **Paste**.

● To copy all color settings of a custom color setting, drag the name of a custom color setting onto another custom color name, and click **OK**.

RELATED LINKS
Customizing the Wave Window and the Montage Window on page 364
Style Tab (Audio Files Preferences) on page 387
Style Tab (Audio Montages Preferences) on page 390

Customizing Shortcuts

In WaveLab Elements, you can control many functions via shortcuts to speed up your workflow. You can edit existing shortcuts and create new shortcuts.

Most shortcuts are restricted to a specific editor, which means that you can reuse the same shortcut combination in different editors. The exception is the **Master Section** where all shortcuts are global to the application.

The shortcuts in the **Navigation (Numeric Pad)** and **View and Navigation** sections on the **Shortcuts** tab are dedicated to navigating through WaveLab Elements.

Shortcuts that cannot be edited are grayed out. The shortcuts that you created are displayed in blue in the editor.

You can create a new shortcut by specifying a key sequence of up to four keys that must be pressed in a specific order to invoke the operation.

RELATED LINKS
Shortcuts Tab (Preferences) on page 366

Shortcuts Tab (Preferences)

This tab allows you to customize your own shortcuts for WaveLab Elements. It shows a list of the assigned shortcuts for WaveLab Elements commands and menu options.

● To open the **Shortcuts** tab, select **File** > **Preferences** > **Shortcuts**.

Search pop-up menu

Allows you to select the part of the commands list in which the search is performed.

Search field

Allows you to search for a command.

Use Wildcards

If this option is activated, the wildcard characters "*" and "?" can be used.

"*" substitutes zero or more characters, and "?" substitutes a single character.

For example, if **Search Keyboard Shortcut** is selected, type "*" to display all commands that are already associated with a shortcut.

Expand/Collapse

Expands/Collapses the folder tree.

Commands list

Shows all commands and their shortcuts. The section below the commands list shows additional information for the selected command.

Reset

Resets the commands to the factory settings.

Summary

Opens a menu from which you can generate a list of all commands and their shortcuts, either in HTML or as a printout.

Edit Shortcut

Opens the **Shortcut Definitions** dialog where you can edit the shortcuts for the selected command.

RELATED LINKS
Customizing Shortcuts on page 366
Editing Shortcuts on page 367

Editing Shortcuts

You can see the list of all shortcuts in the **Shortcuts** tab, and edit and define shortcuts on the **Shortcut Definitions** dialog.

The **Shortcuts** tab provides a different command set for each menu or dialog.

- To open the **Shortcut Definitions** dialog, select **File** > **Preferences** > **Shortcuts**, select a command, and click **Edit Shortcut**. This opens the **Shortcut Definitions** dialog.

- You can define one key shortcut per command. Each shortcut can be a sequence of up to four keystrokes.

- To reset some or all types of shortcuts to their factory default use the **Reset** button.

RELATED LINKS
Shortcuts Tab (Preferences) on page 366
Shortcut Definitions Dialog on page 367

Shortcut Definitions Dialog

This dialog allows you to define your own customized shortcuts for a particular function.

- To open the **Shortcut Definitions** dialog, select **File** > **Preferences** > **Shortcuts**, select a command, and click **Edit Shortcut**.
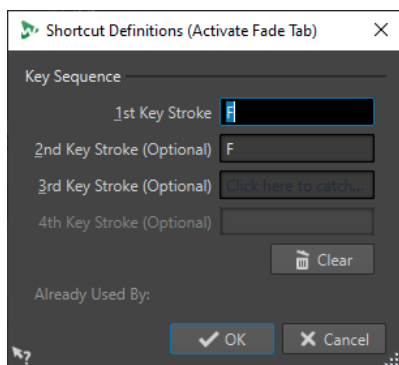
Key Sequence

1st Key Stroke

Lets you select the first key of a sequence that can consist of up to four keys. Set the focus to the key stroke field, then press the key combination. If nothing is displayed, a key is not allowed in this context.

2nd/3rd/4th Key Stroke (optional)

Lets you select additional keys that must be used to execute the command. The command is only executed if this key event happens after the first/second/third one.

Clear

Erases all key event fields.

RELATED LINKS
Editing Shortcuts on page 367
Shortcuts Tab (Preferences) on page 366

Defining Key Sequences

You can define key sequences for a keyboard.

On a Mac, commands for the main menus must consist of a single key command.

When using multiple key stroke commands, make sure that the key commands do not interfere with each other. For example, when you have one shortcut **Shift**-**L**, **M** and define another to be **Shift**-**L**, this second shortcut has no effect.

PROCEDURE

1. Select **File** > **Preferences** > **Shortcuts**.

2. In the commands list, select the command for which you want to define a key sequence, and click **Edit Shortcut**, or double-click the **Key Sequence** column of the corresponding command.

3. In the **Shortcut Definitions** dialog, click in the **Key Stroke** fields and press the buttons that you want to use as the key sequence.

4. Click **OK**.

RESULT

When you now press the keys/buttons specified in the dialog, the corresponding operation is performed. The key strokes must be executed one after the other.

Indexed Key Commands

Indexed key commands allow you to quickly jump to specific locations in your project, for example, to a specific marker or **Master Section** slot.

The available indexed key commands are listed on the **Shortcuts** tab, in the **Navigation (Numeric Pad)** section.

- To trigger an index key command, type the number of the item that you want to jump to and press the corresponding key on your keyboard.

EXAMPLE

If you want to jump to the 5th marker in your file window, press **5** on the numeric pad of your keyboard and then press **M** .

If you want to jump to the 10th file tab, press **1** then **0** on the numeric pad of your keyboard and then press **F** .

Generating a List of All Shortcuts

You can generate an HTML file or print a list that contains all shortcuts.

PROCEDURE

1. Select **File** > **Preferences** > **Shortcuts**.
2. Click **Summary**, and select one of the following options:
   - To open the **Print Preview** dialog, from which you can print out the list of all shortcuts, select **Print Preview**. For **Print Preview** to be available, a printer must be connected.
   - To open the list of all shortcuts in the HTML file format in the standard browser, select **HTML Report**.

Customizing Command Bars

You can hide or show individual command bar buttons. This way you can customize command bars by removing unwanted commands.

PROCEDURE

1. In a tool window, open the menu and select **Customize Command Bar**.

2. To show a specific command on the command bar, activate the checkbox in the **Bar** column for the corresponding command.

3. Click **OK**.

Plug-in Organization

WaveLab Elements comes with various plug-ins, and additional plug-ins can be added. To retain an overview over the plug-ins that are relevant to your project, you can organize your plug-ins in groups.

On the **Organize** tab of the **Plug-ins Preferences**, you can specify how your plug-ins appear on menus in the program. In the plug-ins list, you find subfolders representing groups of plug-ins.

Initially, plug-ins are categorized by vendor, category, favorite plug-ins, and recently used plug-ins.

If the 32-bit and 64-bit versions of WaveLab Elements are used on the same system, their settings are shared. An exception to this rule are the following options in the **Plug-ins Preferences**:

- **Additional VST Plug-in Folders**
- **Ignore Plug-ins Located in the following Subfolders**

This is because 32-bit plug-ins cannot be used in WaveLab Elements 64 bit and vice versa.

RELATED LINKS
Plug-ins Tab (Preferences) on page 373
Adding Additional VST Plug-ins on page 372
Excluding Plug-ins on page 372

Excluding Plug-ins from Certain Plug-in Menus

You can exclude plug-ins from appearing in the plug-in menus in certain areas of WaveLab Elements.

PROCEDURE

1. Select **File** > **Preferences** > **Plug-ins**.

2. Select the **Organize** tab.

3. In the plug-ins list, navigate to the plug-in that you want to exclude.

4. Deactivate the checkbox in for the plug-in. When selecting multiple plug-ins, you can deactivate all of them with a single click.

   - To exclude the plug-in from the plug-in selection menus, deactivate the checkbox in the **Effect** column.

- To exclude the plug-in from the **Final Effect/Dithering** pane of the **Master Section**, deactivate the checkbox in the **Final** column.

Adding Plug-ins to the Favorites Menu

You can add plug-ins that you are using regularly to the **Favorites** menu of the plug-in selection menu.

PROCEDURE

1. Select **File** > **Preferences** > **Plug-ins**.

2. Select the **Organize** tab.

3. In the plug-ins list, navigate to the plug-in that you want to add to the favorites.

4. Activate the checkbox for the corresponding plug-in in the **Favorites** 👑 column.

   NOTE

   If the **Favorites** menu is empty, it does not appear in plug-in selection menus.

Customizing Plug-in Groups

You can customize the appearance and sorting of plug-ins on the **Organize** tab of the **Plug-ins Preferences**.

- To update the tree, click **Show Changes**.
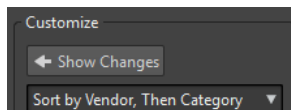
- The category labels that are used to create the hierarchy are supplied by the plug-in manufacturers. To change the category name, navigate to the **Category Renaming** table, click in the **Original** column, and select the category that you want to rename. Then click in the **Modified** column, and enter a new name.

- To change the sorting of plug-in groups, select whether to sort by category or by vendor in the sorting menu of the **Customize** section. If a plug-in does not publish a vendor name or category, the name of the enclosing plug-in folder on disc is used as vendor name or category if it is not the VST plug-in root folder.

- To group all plug-ins that start with the same prefix in one submenu, activate **Create Submenus Based on Prefixes**, and specify the number of plug-ins that must start with the same prefix. Only if this number is reached, a submenu is created.

- To group plug-ins in a single submenu if their number is below a specified value, activate **Compress Hierarchy**, and specify the threshold. A tree is flattened to a single submenu if the number is below the threshold. This prevents too small submenus.

- To activate the **Recently Used** category, activate **Submenu with Recently Used Plug-ins**, and specify the maximum number of recently used plug-ins that should be displayed in this category.

- You can make the **Recently Used** category global to all places or individual for each context, for example, for the **Master Section**, audio montage track, or audio montage clip. To make the **Recently Used** category individual for each context, activate **Independent Recently Used Plug-ins Menus**.

RELATED LINKS
Plug-ins Tab (Preferences) on page 373

Adding Additional VST Plug-ins

You can specify folders where additional VST plug-ins can be found. This is useful if you are using third-party VST plug-ins that you do not want to save in the standard VST folder.

PROCEDURE

1. Select **File** > **Preferences** > **Plug-ins**.

2. Select the **General** tab.

3. In the **Additional VST Plug-in Folder (**WaveLab Elements **Specific)** section, click the folder icon, and navigate to the folder that contains the VST plug-ins that you want to add.

RELATED LINKS
Plug-ins Tab (Preferences) on page 373

Excluding Plug-ins

You can specify a list of plug-ins that WaveLab Elements does not open.

PROCEDURE

1. Select **File** > **Preferences** > **Plug-ins**.

2. Select the **General** tab.

3. In the **Do Not Load the Following Plug-ins** section, type in the name of the plug-in that you do not want to open:

   - Enter the exact file name, without path and without file extension.
   - Enter one name per line.
   - If you put "*" in front of the name, any plug-in that contains the name is ignored.

RELATED LINKS
Plug-ins Tab (Preferences) on page 373

Replacing Missing Plug-ins

When you open an audio montage and some plug-ins for tracks or clips are missing, you can select plug-ins to replace the missing plug-ins.

PROCEDURE

1. In the **Missing Plug-ins** dialog, click the **Replacement** column, and select a replacement for the plug-in displayed in the **Original** column.
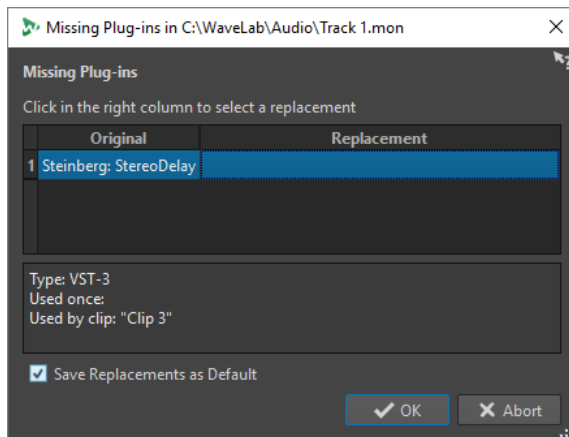
2. If you want to use the new plug-in from now on, activate **Save Replacements as Default**.

3. Click **OK**.

Plug-ins Tab (Preferences)

On this tab, you can access a number of options for managing your VST plug-ins.

You can specify where WaveLab Elements should search for your VST plug-ins and which ones it should ignore. It also allows you to choose how your VST plug-in controls respond to mouse actions and how frequently graphics are updated.

If you use your own file structure to organize and save VST plug-ins, this dialog allows you to gain full control over which plug-ins are loaded and which are ignored. This is useful if you want to deactivate a particular plug-in or if you want to ignore plug-ins that you never want to use with WaveLab Elements.

● To open the **Plug-ins Preferences**, select **File** > **Preferences** > **Plug-ins**.

General Tab
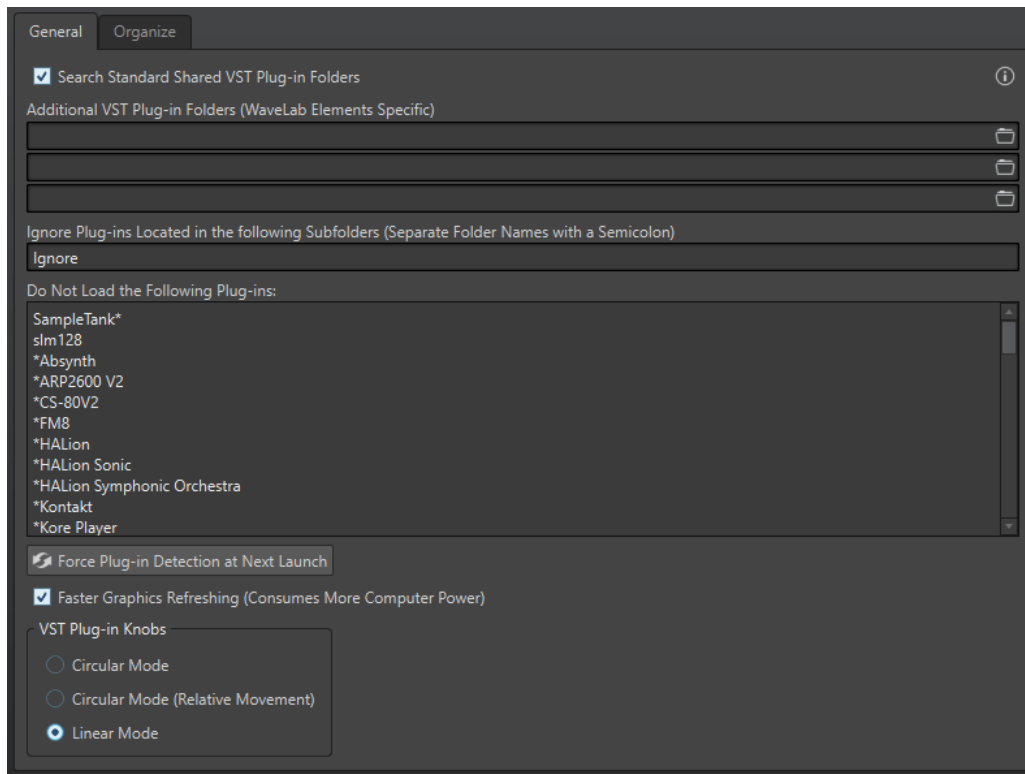
Search Standard Shared VST Plug-in Folders

If this option is activated, WaveLab Elements searches for VST plug-ins in the default VST plug-in folders.

Information About the Searched Folders

Click on the info icon ⓘ to see in which folders WaveLab Elements searched for plug-ins when it was launched.
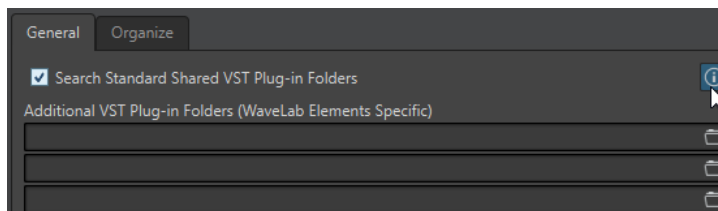
If you cannot find a plug-in in WaveLab Elements, this helps you to determine whether you have specified the correct folder, for example.
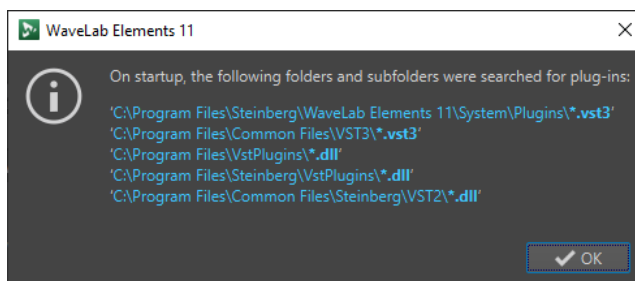
Additional VST Plug-in Folders (WaveLab Elements Specific)

Lets you specify additional folders where VST plug-ins can be found.

Ignore Plug-ins Located in the following Subfolders (Separate Folder Names with a Semicolon)

Lets you specify folder names that WaveLab Elements skips when searching for VST plug-ins.

Do Not Load the Following Plug-ins

Lets you specify plug-ins that WaveLab Elements does not open. Enter the file names, without path and without file extension. Write each plug-in on a new line.

If you put the character * in front of the name, any plug-in that contains the name is ignored.

Force Plug-in Detection at Next Launch

Analyzes the plug-ins when launching WaveLab Elements the next time. To reduce the start time of WaveLab Elements, the plug-ins are not analyzed every time WaveLab Elements is started. However, WaveLab Elements keeps a list of plug-ins and updates this automatically when a date or size change is detected.

Ignore Updated Plug-ins When Performing Plug-in Detection

If this option is activated, WaveLab Elements does not check if the properties of updated plug-ins have changed. If you have plug-ins that are updated often, this option speeds up the WaveLab Elements startup.

However, some manufacturers combine multiple plug-ins within a single file. If you know that some plug-ins were added by the manufacturer but do not appear in WaveLab Elements, deactivate this option and restart WaveLab Elements. Afterwards, you can activate this option again.

Faster Graphics Refreshing (Consumes More Computer Power)

Refreshes the graphics of VST plug-ins more quickly.

VST Plug-in Knobs

Lets you set the mode for using knobs in plug-ins. The available options are **Circular Mode**, **Circular Mode (Relative Movement)**, and **Linear Mode**.

Organize Tab
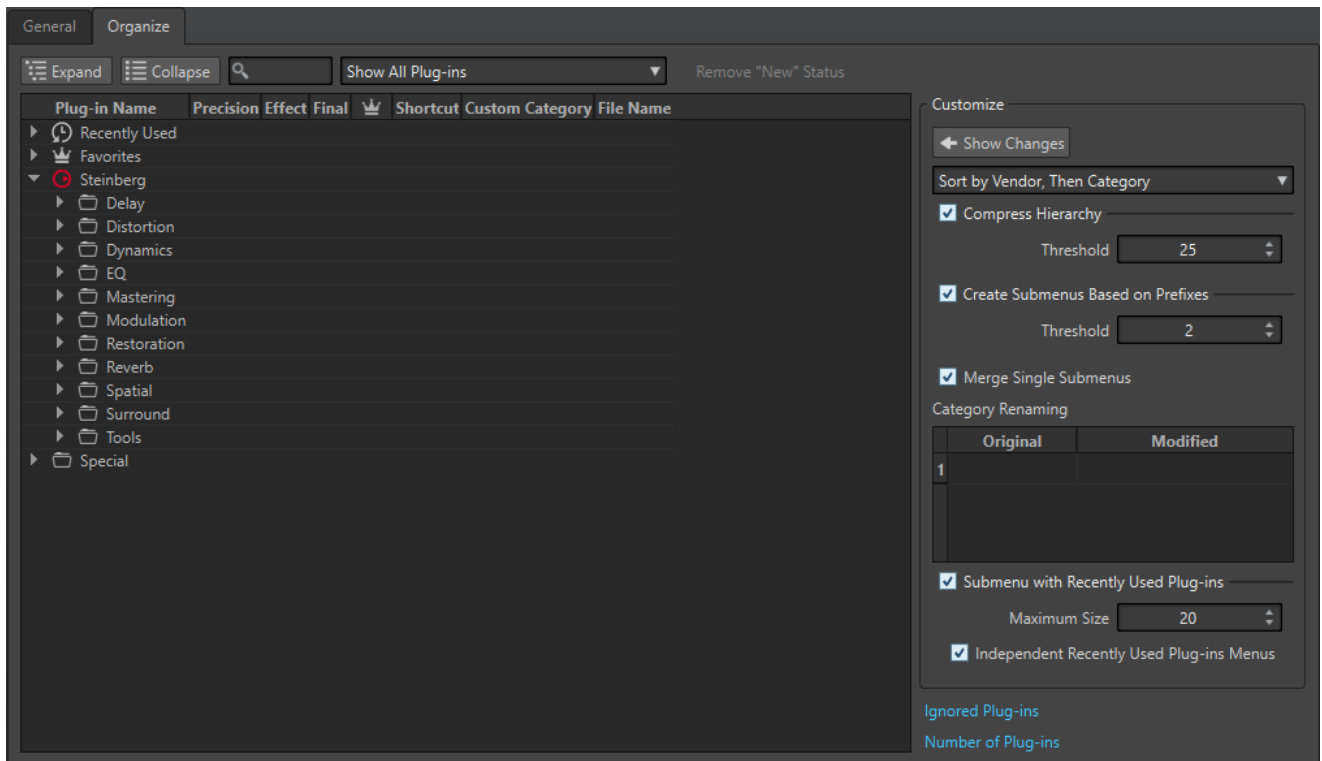
Plug-ins list

Displays the hierarchy of the plug-ins in WaveLab Elements. In the **Final** column, you can specify whether a plug-in is available on the plug-in selection menus and/or the **Final Effect/Dithering** pane of the **Master Section**.

You can add plug-ins to the **Favorites** list, create shortcuts for plug-ins, specify custom categories, and decide whether to use the generic user interface or the plug-in specific user interface.

The **Precision** column displays the processing precision of each plug-in. 64-bit float plug-ins are capable of double precision processing. In other effects menus throughout WaveLab Elements, plug-ins that are capable of double precision processing are marked with "64 F" for 64-bit float.

NOTE

Processing in 64-bit float means double precision but slightly longer process time than 32-bit float.

Expand/Collapse

Expands/Collapses the folder tree.

Search field

Allows you to filter the plug-ins list for names.

- Click in the search field, and enter the text that you want to search for.
- To switch the focus from the search field to the plug-ins list, press **Down Arrow**.

- To switch the focus from the plug-ins list to the search field, press **Ctrl/Cmd**-**F**.

Filter menu

Allows you to only display plug-ins that have certain properties.

- **Show All Plug-ins** displays all plug-ins.
- **Show New Plug-ins** only displays recently detected plug-ins.
- **Show 32-bit float Plug-ins** only displays plug-ins that are capable of 32-bit float processing.
- **Show 64-bit float Plug-ins** only displays plug-ins that are capable of 64-bit float processing.
- **Show Plug-ins with a Custom Category** only displays plug-ins that have a custom category.
- **Show Plug-ins without a Custom Category** only displays plug-ins that do not have a custom category.

Remove "New" Status

Resets the "new" status of the recently detected plug-ins.

Show Changes

Refreshes the plug-in tree according to the current settings.

Sorting

Determines how the plug-ins are sorted. The other parameters act on that hierarchy.

Compress Hierarchy

Merges all items into a single submenu if a submenu and all its submenus contain less than a specific number of plug-ins (**Threshold**).

The **Threshold** value determines the minimum number of items that are needed to compress the hierarchy.

Create Submenus Based on Prefixes

Creates a submenu that is labeled as the prefix if several items in a submenu start with the same prefix.

The **Threshold** value determines the minimum number of items that must start with the same prefix that are needed to create submenus that are labeled as the prefix.

Merge Single Submenus

Merges submenus that contain another submenu with only a single item in it.

Category Renaming

The category labels used to create the hierarchy are supplied by the plug-in manufacturers. In this section, you can change the category name. This can also be useful to merge two categories into one, by renaming these two categories with the same name.

Submenu with Recently Used Plug-ins

If this option is activated, the **Recently Used** submenu is shown.

The **Maximum Size** value determines the maximum number of plug-ins on the **Recently Used** submenu.

The **Independent Recently Used Plug-ins Menus** option determines whether the **Recently Used** submenu is global to all places where plug-ins can be selected, or if it is local to each context.

Ignored Plug-ins

Opens the **Ignored Plug-ins** dialog, where you can see plug-ins which were not loaded. This dialog lets you instruct WaveLab Elements to rescan these plug-ins at the next launch. This is faster than a full rescan.

Number of Plug-ins

Shows the number of plug-ins that are available in WaveLab Elements.

Touch Bar (macOS only)

The Touch Bar at the top of your keyboard gives you shortcuts to the WaveLab Elements functions. The Touch Bar changes automatically based on where you are in WaveLab Elements and offers a subset of the available options. You can customize the Touch Bar according to your needs.

NOTE

The Touch Bar is only available on certain Apple products.

RELATED LINKS
Customizing the Touch Bar (macOS only) on page 378

Customizing the Touch Bar (macOS only)

You can customize the Touch Bar in the Touch Bar customization window.

CHOICES

● To open the Touch Bar customization window, select **WaveLab Elements 11** > **Customize Touch Bar**.

● To add an option to the Touch Bar, use your cursor to drag your favorite options from the customization window down into the Touch Bar.

When you are done, tap **Done** in the Touch Bar or click **Done** on the screen.

● To rearrange options within the Touch Bar, drag them to the left or right.

● To remove options from the Touch Bar, drag them up and out of the Touch Bar.

RELATED LINKS
Touch Bar (macOS only) on page 378

Configuring WaveLab Elements

You can configure WaveLab Elements according to your needs.

NOTE

The settings that you make in the preferences are applied when you switch to another WaveLab Elements window.

Global Preferences

Global Preferences are preferences that apply throughout WaveLab Elements. Before you start working with WaveLab Elements, it is recommended to edit these preferences according to your needs.

● To open the **Global Preferences**, select **File** > **Preferences** > **Global**.

General Tab (Global Preferences)

This tab allows you to change the location of settings files and the user interface language. You must restart the application for changes to take effect.

● To open the **General** tab of the **Global Preferences**, select **File** > **Preferences** > **Global** and click **General**.

General

Language

Allows you to select the user interface language.

Setting Location

Common for All Users

Shares the preferences settings with all users on this computer.

Independent for Each User

Lets each user on this computer make their own preferences settings.

Application Folder (Portable Installation)

Saves settings in the application directory. Use this option to install the application on a portable device.

Specific Folder

Allows you to save the settings in a specified folder.

Open Setting Folder

Opens the folder that is used to save settings. This way you know where the settings are saved and you can back up the settings.

Synchronization Settings

Master Folder

Allows you to specify where the preference settings are saved.

Synchronize at Every Launch

If this option is activated, the settings are synchronized whenever WaveLab Elements is launched.

Synchronize at Next Launch

If this option is activated, the settings are synchronized the next time that WaveLab Elements is launched.

Preferences Handling

Determines how to synchronize the preferences, that is, all settings except the presets. You can either ignore or mirror the preferences.

Preset Handling

Determines how to synchronize the presets that are saved in the master folder. The following options are available:

- If **Ignore Presets** is activated, the presets are not synchronized.
- If **Mirror Presets** is activated, the presets are restored from the master folder, regardless of their time stamp. Any additional local presets are deleted.
- If **Import New Presets** is activated, the presets in the master folder that are unavailable on the computer are imported.
- If **Update Old Presets** is activated, existing presets are overwritten if a newer version is found in the master folder.

Ignore the following Preset Folders (Separate Them with a Semicolon)

Allows you to specify which preset folders you want to ignore when synchronizing the settings. For example, to ignore the Audio Connections settings, add **Audio Connections** to the field.

Update Master

If you click this button, the settings that were used when launching WaveLab Elements are used to update the master folder.

NOTE

This procedure should only be run by the system administrator if multiple WaveLab Elements workstations are used.

RELATED LINKS
Global Preferences on page 379

Display Tab (Global Preferences)

This tab allows you to change many aspects of the user interface that apply across the whole application. These options provide information and usability functions but can be deactivated to streamline the interface.

- To open the **Display** tab of the **Global Preferences**, select **File** > **Preferences** > **Global** and click **Display**.

Style

Theme

Allows you to switch between the WaveLab Elements color schemes.

Miscellaneous Options

Show Application in High DPI (Windows only)

If this option is activated and your display supports high resolution, WaveLab Elements is displayed in high resolution. If your display does not support high resolution, this option will be ignored.

NOTE

Plug-in windows are not displayed in high-resolution. If plug-in windows appear too small, deactivate **Show Application in High DPI**.

Restrict Scaling to Multiples of 100

If this option is activated, only scaling factors that are multiples of 100 are supported. For example, if you use a scaling factor of 150 %, in WaveLab Elements, the scaling used is 200 %.

If this option is deactivated, intermediate ratios such as 150 % are possible.

Use the System File Selector to Open Files

If this option is activated, the standard file selector opens when you select **Save As**.

Open Quick File Selector When Saving Files

If this option is activated and you save a file via the save shortcut, a dialog opens instead of the **File** tab.

Hide Unused Ribbon Tabs

If this option is activated, unused ribbon tabs are hidden.

Show WaveLab Elements Logo on Startup

Determines whether the WaveLab Elements logo is displayed during initialization.

Show Tooltips

If this option is activated, tooltips are displayed when you move the mouse cursor over markers or command bar buttons.

Hide Top Level Windows When the Application Is Not Active (Windows only)

If this option is activated, all floating windows are automatically hidden when another application becomes active. If this option is deactivated, floating windows remain on top of other application windows.

History

Maximum Number of Items in Recent File Menus

Sets the maximum number of files that are listed in recent file menus.

Audio Tab (Global Preferences)

This tab allows you to change audio preferences like the processing precision.

● To open the **Audio** tab of the **Global Preferences**, select **File** > **Preferences** > **Global** and click **Audio**.

Processing Precision

Plug-in Processing allows you to select the processing precision for plug-ins.

● If you select **64 bit float** and a plug-in is capable of processing 64-bit samples, processing takes place in lossless 64 bit.

If a plug-in is only capable of handling 32-bit samples, WaveLab Elements converts all 64-bit float samples to 32-bit float before sending them to the plug-in. After the plug-in processing is completed, WaveLab Elements converts the 32-bit float samples back to 64-bit float without loss.

● If you select **32 bit float**, WaveLab Elements converts all 64-bit float samples to 32-bit float before sending them to the plug-in. After the plug-in processing is completed, WaveLab Elements converts the 32-bit float samples back to 64-bit float without loss.

In the plug-in menus, the "32F" and "64F" indicators next to the plug-in name show whether a plug-in is capable of 32-bit float or 64-bit float.

NOTE

Processing in 64-bit float means double precision but slightly longer process time than 32-bit float.

Temporary Files allows you to select the precision of temporary files that WaveLab Elements creates when processing audio.

By default, WaveLab Elements creates temporary files in 32-bit float. Use **64 bit float** if you want to create 64-bit float audio files or 32-bit PCM files.

NOTE

Temporary files in 64-bit float have double precision but take longer to read and write than 32-bit float and their file size is twice as big.

Formats Tab (Global Preferences)

This tab allows you to adjust settings for some of the audio formats and units that WaveLab Elements uses.

- To open the **Formats** tab of the **Global Preferences**, select **File** > **Preferences** > **Global** and click **Formats**.

Formats

Use AES17 Standard for RMS Values

Determines how RMS values are reported.

- If this option is activated, the displayed level for a full scale sine audio file is 0 dB. This follows the AES17 standard.
- If this option is deactivated, the displayed level for a full scale sine audio file is -3 dB.

Pitch of A3 (Used in Frequency To Note Conversions)

Sets the reference pitch in WaveLab Elements. The frequency-to-note conversions take this pitch into account.

Create Windows-Compatible File Names (macOS only)

Some characters in file names, for example, | and \, are not supported by Windows. If this option is activated and you save a file, WaveLab Elements converts unsupported characters to characters that are supported by Windows.

MIDI Note Display

The options in this section allow you to choose whether to display the different key values in WaveLab Elements with the pitch or the MIDI note number of the key. In musical notation, keys are denoted according to their pitch. For example, C3 means the note C in the third octave.

Each key corresponds to a MIDI note number from 0 to 127. For example, key C3 corresponds to the MIDI note number 48. MIDI note numbers make it possible for samplers to automatically map samples to the correct keys.

Numeric Style

Determines the format for MIDI notes that are displayed as numbers.

Middle C (Note #60)

Determines the key convention for the MIDI note range (0-127).

Display

Determines how MIDI notes are displayed throughout the application.

RELATED LINKS
Global Preferences on page 379

CD Writing Tab (Global Preferences)

This tab allows you to set a number of parameters for CD writing.

- To open the **CD Writing** tab of the **Global Preferences**, select **File** > **Preferences** > **Global** and click **CD Writing**.

CD Writing

Use Burnproof

Fixes possible buffer underrun errors automatically, provided that the CD writer supports this technology.

Allow Disc Overflow

Allows WaveLab Elements to attempt writing more data (max. 2 minutes) than the official capacity of the disc.

Maximum Audio CD Size

Allows you to specify the maximum length for a CD. A warning message will appear if the project exceeds this length. The standard maximum length is 74 minutes.

RELATED LINKS
Global Preferences on page 379

Options Tab (Global Preferences)

This tab allows you to reset the default message boxes.

● To open the **Options** tab of the **Global Preferences**, select **File** > **Preferences** > **Global** and click **Options**.

Reset Default Answers

Resets all message box options to their default settings. For example, all **Do not show again** options are deactivated.

RELATED LINKS
Global Preferences on page 379

External Applications Tab (Global Preferences)

This tab allows you to specify an alternative external file browser.

● To open the **External Applications** tab of the **Global Preferences**, select **File** > **Preferences** > **Global** and click **External Applications**.

Alternative External File Browser

Allows you to specify an alternative external file browser that opens when you use the **Reveal Folder in File Explorer/macOS Finder** or **Reveal Files in File Explorer/macOS Finder** options in WaveLab Elements.

If the application needs a special command line formatting, you can specify it in the **Command Line** field. Use **%1** as a placeholder for the file or folder to which you want to browse.

RELATED LINKS
Global Preferences on page 379
Alternative External File Browser on page 394

Audio Files Preferences

This dialog allows you to define settings for editing in the **Audio Editor**. However, these settings also affect other parts of WaveLab Elements. You can choose defaults for editing and playback,

adjust the visual appearance of the waveform displays, and determine how WaveLab Elements works with audio and peak files.

● To open the **Audio Files Preferences** tab, select **File** > **Preferences** > **Audio Files**.

RELATED LINKS

Editing Tab (Audio Files Preferences)

Display

Save Related Settings in Companion File

If this option is activated, zoom settings, ruler settings, and optionally the **Master Section** preset that is associated with the audio file are saved in a companion file. If the audio file is reopened, these settings are used. Deleting a companion file does not alter the audio contents.

Save in an Independent Folder

If this option is activated, the companion file is not saved in the same folder as the related audio file but in a folder that you can specify.

Edit

Opens the **Folders** dialog that allows you to specify where to save the companion files.

Show Overview When Opening New Audio Files

If this option is activated and you open an audio file, the overview is also displayed. If this option is deactivated, only the main view is displayed.

Show Overview for Mono and Stereo Files Only

If this option is activated, the overview window is displayed when opening mono and stereo files, and hidden when opening multichannel audio files. To show the overview for multichannel audio files, click at the top of the main window and drag down.
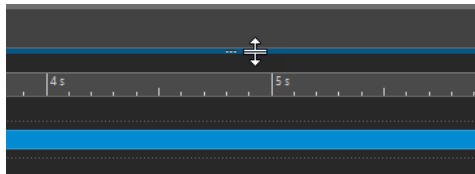
Overview: Passive Range Indicator Also Covers the Waveform

If this option is activated, the range indicator that is displayed in the time ruler of the overview also covers the waveform area. Unlike the time ruler indicator, the range indicator is passive and cannot be modified.

Analog Waveform Emulation at Sample Level Zooming

If this option is activated and a waveform is zoomed at the sample level in the timeline, an analog emulation of the waveform is displayed.

Auto-Zoom for Overviews

If this option is activated and you open an audio file, the zoom of the overview is set to display the whole file.

Display File Extension on Tabs

If this option is activated, tabs display file names with their extension. For example, "piano.mp3" instead of "piano".

Number of Seconds to Display on Opening

Lets you specify the time range to display when opening an audio file for the first time. WaveLab Elements converts this time range to the appropriate zoom factor.

Whole Audio File

If this option is activated, the horizontal zoom is set to display the whole file.

Editing

Process Whole File If There is No Selection

If this option is activated and a process is to be applied to an audio file, the whole file is processed if no audio is selected. In the same situation, if the option is deactivated, a warning appears.

Allow Undoing Edits after Saving File

If this option is activated, you can undo edits after you have saved the file. You can deactivate this option if you want to use less disk space or if you want to remove all temporary files when saving the file.

Playback Scrubbing

Restrict to Play Tool

If this option is activated, this function only works if the **Play Tool** is used.

Sensitivity

Lets you set the micro audio loop duration that is performed when you move the mouse cursor over the time ruler.

Snap Selection to Zero-Crossing

Do Not Snap at High Zoom Factors

If this option is activated, snapping does not occur if the waveform is displayed at a high zoom factor.

Scan Range

Lets you define how far WaveLab Elements searches a zero-crossing point in the left and right direction.

RELATED LINKS

File Tab (Audio Files Preferences)

Support RF64 File Format

If this option is activated, WaveLab Elements creates WAV files that can be larger than 2 GB.

NOTE

This file format is not supported by all applications.

Default Sample Rate for Files without Header

Lets you specify the sample rate of audio files that do not have a header describing this property.

Create Peak Files in an Independent Folder

If this option is activated, peak files are not saved in the same folder as the related audio file. To specify the folder location, click **Edit**.

RELATED LINKS
Audio Files Preferences on page 384

Style Tab (Audio Files Preferences)

This tab allows you to specify custom colors for parts of the wave window.

Theme

Lets you select the default style and conditional styles.

Parts

Shows parts that can be colorized. Click a part to edit the color.

Hide (for specific parts only)

Hides the selected part.

Dotted Line (for specific parts only)

Changes the line to a dotted line.

Transparency (for specific parts only)

Lets you edit the degree of transparency of the selected element.

Element Size (for specific parts only)

Lets you edit the size of the selected element.

Change Both Channels If Applicable

Allows you to make separate color settings for the left and the right side of a stereo file. If this option is activated, settings for the left side of a file are automatically mirrored on the right side, and vice versa.

Dim Playback Cursor for Muted Channels

If this option is activated, the part of the playback cursor that overlaps muted audio channels is transparent.

Change Both Main View and Overview

Allows you to make separate color settings for the main view and the overview. If this option is activated, settings for the main view are automatically mirrored on the overview, and vice versa.

Color Picker

Lets you select the color for the selected part. Click the surrounding circle to select the hue. Click in the triangle to adjust the saturation and lightness.

Red/Green/Blue

Lets you specify the red, green, and blue components of the RGB color spectrum.

Copy Color

Copies the current color to the clipboard.

Paste

Pastes the color from the clipboard.

This Style Is Used If These Conditions Apply

These options let you define conditions under which a specific color style is applied.

File Extension Is Any Of

If this option is activated, the color style is applied to files with the specified extension. Separate extensions with a ";" character.

Name Contains Any of These Keywords

If this option is activated, the color style is applied to files with specific keywords in their name. Separate keywords with a ";" character.

Sample Rate Is in the Range

If this option is activated, the color style is applied to files that have a sample rate within the specified range.

Bit Depth Is in the Range

If this option is activated, the color style is applied to files that have a bit depth within the specified range.

Number of Channels Is

If this option is activated, the color style is applied to files that have the specified number of channels.

RELATED LINKS

Color Elements in the Audio Editor

You can assign custom colors to various elements of the **Audio Editor**. Depending on the selected element, additional settings can be made for transparency, appearance, or whether a line should be dotted, for example.

Left Channel/Right Channel

Waveform

The waveform color.

Waveform (Selected)

The waveform color of the selected part of the waveform.

Waveform Outline

The outline color of the waveform.

Waveform Outline (Selected)

The outline color of the selected part of the waveform.

Background Top

The color of the background top.

Background Top (Selected)

The color of the selected part of the background top.

Background Bottom

The color of the background bottom.

Background Bottom (Selected)

> The color of the selected part of the background bottom.

Waveform Main Axis

> The color of the waveform main axis and its style.

Waveform 50% Axis

> The color of the waveform 50% axis and its style.

Waveform Elements

Channel Separator

> The color of the channel separator line.

Cursor (Edit)

> The color of the edit cursor, its width, and transparency.

Cursor (Edit, No Focus)

> The color of the edit cursor for a file that does not have the focus.

Cursor (Play)

> The color of the cursor during playback.

Pre-/Post-Roll Indication

> The color of the pre-/post-roll indication.

Marker Line

> The color of the marker lines and an optional transparency.

Edit Indicator Line

> The color of the edit indicator line.

Edit Indicator Head

> The color of the edit indicator head.

End of File Indicator

> The color of the end of the file indicator.

Time Ruler Style

> The color of the time ruler and its style.

Time Ruler Font

> The color of the font on the time ruler and the font size.

Level Ruler Style

> The color of the level ruler, its style, and transparency.

Level Ruler Font

> The color of the font on the level ruler and the font size.

RELATED LINKS

Audio Montages Preferences

This dialog allows you to set up general parameters for all audio montages or for the active audio montage only.

● To open the **Audio Montages Preferences** tab, select **File** > **Preferences** > **Audio Montages**.

Style Tab (Audio Montages Preferences)

This tab allows you to specify custom colors to clips and parts of a clip in the montage window.

Theme

Allows you to switch between the WaveLab Elements color schemes.

Parts

Shows parts that can be colorized. Click a part to edit the color.

Checkbox

Allows you to select multiple parts to colorize multiple parts at the same time.

Undo

Undoes the last change. This action is also possible after saving the file.

Redo

Allows you to redo changes that were undone. This action is also possible after saving the file.

Hide

Hides the selected part.

Change Both Channels If Applicable

It is possible to make separate color settings for the left and the right side of stereo clips. If this option is activated, settings for the left side of a clip are automatically mirrored on the right side, and vice versa.

Dim Playback Cursor for Muted Tracks

If this option is activated, the part of the playback cursor that overlaps muted tracks is transparent.
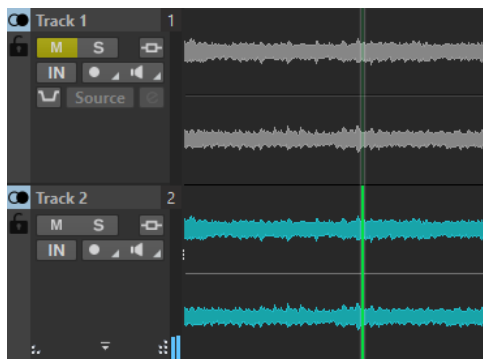
Color Picker

Lets you select the color for the selected part. Click the surrounding circle to select the hue. Click in the triangle to adjust the saturation and brightness.

Red/Green/Blue

Lets you specify the red, green, and blue components of the RGB color spectrum.

Copy Color

Copies the current color to the clipboard.

Paste

Pastes the color from the clipboard.

This Style Is Used If These Conditions Apply

These options let you define conditions under which a specific color style is applied.

File Extension Is Any Of

If this option is activated, the color style is applied to clips referencing a file with the specified extension. Separate extensions with a ";" character.

Name Contains Any of These Keywords

If this option is activated, the color style is applied to clips with specific keywords in their name. Separate keywords with a ";" character.

Sample Rate Is in the Range

If this option is activated, the color style is applied to clips referencing a file that has a sample rate within the specified range.

Bit Depth Is in the Range

If this option is activated, the color style is applied to clips referencing a file that has a bit depth within the specified range.

Number of Channels Is

If this option is activated, the color style is applied to clips that have the specified number of channels.

RELATED LINKS

Color Elements in the Audio Montage

You can assign custom colors to various elements of the montage window.

Clip Colors

The following clip types are available:

Crossfade Region

Allows you to set the background color for overlapping clip sections.

Default

The default colors, used for clips for which you have not selected any specific color.

Locked

The colors used for fully locked clips.

Muted

The colors used for muted clips.

Custom

> These options correspond to the items on the color submenus. You can set up conditions in the **This Style Is Used If These Conditions Apply** section for when these should be automatically applied.

The following color elements are available:

Background Top/Bottom

> The background colors of the clip. The resulting display backgrounds are gradient fades from the top colors to the bottom colors.

Waveform (Normal/Selected)

> The waveform color for selected and unselected clips.

Waveform Outline (Normal/Selected)

> The color of the waveform outline for selected and unselected clips.

Edge

> The left and right edge of the clip.

Edge (Selected)

> The left and right edge of a selected clip.

Axis (Level Zero)

> The color of the horizontal dotted line in the middle of a clip, indicating the zero level.

Axis (Half Level)

> The color of the horizontal dotted lines halfway up and down from the middle of a clip, indicating 50% level.

Channel Separator (Stereo Clip)

> The line dividing the two sides in a stereo clip.

Clip Name

> The name label of the clip.

Active Clip Name

> The name label of the active clip.

Active Clip Name Background

> The name label background of the active clip.

Miscellaneous

Background Top/Bottom

> The background colors of the track view for areas without a clip.

Background (Selected Range) Top/Bottom

> The background colors in selected ranges.

Cursor (Edit)/Cursor (Edit, No Focus)/Cursor (Playback)

> The color of the corresponding cursor.

Marker Line

> The color of the marker lines in the audio montage.

Cue Point Line/End Cue Point Line

> The color of the vertical dotted cue point lines and end cue point lines.

Time Grid Lines

The color of the time grid if activated on the menu of the time ruler.

RELATED LINKS
Audio Montages Preferences on page 390
Style Tab (Audio Montages Preferences) on page 390

Synchronizing WaveLab Elements Settings on Several Computers

You can make some reference settings available to other WaveLab Elements installations. These settings can then be used by other WaveLab Elements workstations to keep the settings synchronized on several computers.

PROCEDURE

1. Select **File** > **Preferences** > **Global**.

2. Select the **General** tab.

3. In the **Setting Location** section, specify where to save the settings.

Multi-User Settings

If you use multiple WaveLab Elements stations in your studio or in your school, for administration, etc., you can set up one WaveLab Elements station to be the master station. The shared preferences and presets of this station can then be used by other slave stations.

These settings can be saved on the local network, for example.

If the administrator updates these settings, the different WaveLab Elements stations can synchronize with the master settings. You can also use this feature for individual computers to back up a reference setting and revert to this if necessary.

The settings in the **General** tab of the **Global Preferences** dialog are not synchronized. These are saved for each user in the `startup.ini` (Windows) or `startup.plist` (Mac).

IMPORTANT

Settings cannot be synchronized between PC and Mac.

Setting Up a Multi-User Setup

You can use the settings that you have made on a master WaveLab Elements station for other slave WaveLab Elements stations.

PROCEDURE

1. Set up a WaveLab Elements station with all settings and presets that you want to use on other WaveLab Elements stations.

2. Assign read-only access to the settings folder of the master WaveLab Elements station.

3. Open WaveLab Elements on another station for which you want to use the master settings.

4. Select **File** > **Preferences** > **Global**.

5. Select the **General** tab.

6. In the **Synchronization Settings** section, set up the **Master Folder**, specify when the settings should be synchronized, and specify whether to include the preferences and/or presets.

7. Close WaveLab Elements.

8. Copy the `startup.ini` (Windows) or `startup.plist` (Mac) of the slave WaveLab Elements station to the settings folder of the other slave WaveLab Elements stations.

RESULT

All slave WaveLab Elements stations use the settings of the master WaveLab Elements station.

Alternative External File Browser

By default, WaveLab Elements uses the file browser of your operating system when you browse for audio files, for example. However, you can specify an alternative external file browser in the **Preferences**.

RELATED LINKS
Setting up Alternative External File Browsers on page 394

Setting up Alternative External File Browsers

PROCEDURE

1. Select **File** > **Preferences** > **Global**.

2. Select **External Applications**.

3. Activate **Alternative External File Browser**.

4. Click the text field to open the file browser.

5. Specify the file location of the alternative external file browser.

6. Click **OK**.

RELATED LINKS
Alternative External File Browser on page 394
External Applications Tab (Global Preferences) on page 384

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